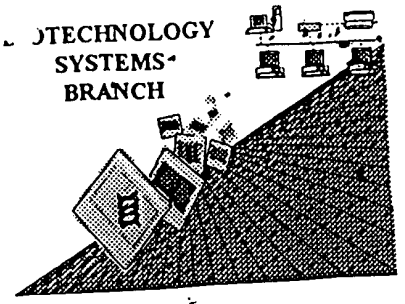
1011



RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/749728

Source: OIPE

Date Processed by STIC: 10/03/01

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) **INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
2) **TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.
Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address:
http://www.uspto.gov/web/offices/pac/checker

Raw Sequence Listing Error Summary

ERROR DETECTED	SUGGESTED CORRECTION	SERIAL NUMBER: 09/749728

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFT

1	✓ Wrapped Nucleics Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
2	Invalid Line Length	The rules require that a line not exceed 72 characters in length. This includes white spaces.
3	Misaligned Amino Numbering	The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
4	Non-ASCII	The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
5	Variable Length	Sequence(s)____contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
6	PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
7	Skipped Sequences (OLD RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
8	Skipped Sequences (NEW RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence. <210> sequence id number <400> sequence id number 000
9	Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present. In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
10	Invalid <213> Response	Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence
11	Use of <220>	Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
12	PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
13	Misuse of n	n can only be used to represent a single nucleotide in a nucleic acid sequence. N is not used to represent any value not specifically a nucleotide.

OIPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
      3 <110> APPLICANT: KYOWA HAKKO KOGYO CO., LTD
      5 THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION
E-->  5 <111> THE CELL HAVING THE POTENTIALITY OF DIFFERENTIATION
      6       INTO CARDIOMYOCYTES
W-->  0 <120> TITLE INVENTION:
      8 <130> FILE REFERENCE: 11217WO3
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/749,728
C--> 11 <141> CURRENT FILING DATE: 2001-09-17
     13 <150> PRIOR APPLICATION NUMBER: H11-372826
     14 <151> PRIOR FILING DATE: 1999-12-28
     16 <150> PRIOR APPLICATION NUMBER: PCT-JP00-01148
     17 <151> PRIOR FILING DATE: 2000-02-28
     19 <150> PRIOR APPLICATION NUMBER: PCT-JP00-07741
     20 <151> PRIOR FILING DATE: 2000-11-02
     22 <160> NUMBER OF SEQ ID NOS: 80
     24 <170> SOFTWARE: PatentIn Ver.2.0
```

Does Not Comply
Corrected Diskette Needed

Wrapped Amino Strings
See Error Summary Sheet

ERRORED SEQUENCES

```
     26 <210> SEQ ID NO: 1
     27 <211> LENGTH: 411
     28 <212> TYPE: PRT
     29 <213> ORGANISM: Homo sapiens
W--> 30 <400> SEQUENCE: 1
     31 Met Arg Ala His Pro Gly Gly Gly Arg Cys Cys Pro Glu Gln Glu
E--> 32 Glu
E--> 33   1               5                  10                  15
     34 Gly Glu Ser Ala Ala Gly Gly Ser Gly Ala Gly Gly Asp Ser Ala
E--> 35 Ile
E--> 37             20                  25                  30
     38 Glu Gln Gly Gly Gln Gly Ser Ala Leu Ala Pro Ser Pro Val Ser
E--> 39 Gly
E--> 40         35                  40                  45
     41 Val Arg Arg Glu Gly Ala Arg Gly Gly Gly Arg Gly Arg Gly Arg
E--> 42 Trp
E--> 43      50                  55                  60
     44 Lys Gln Ala Gly Arg Gly Gly Gly Val Cys Gly Arg Gly Arg Gly
E--> 45 Arg
E--> 46  65                  70                  75
E--> 47   80
     48 Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly
E--> 49 Arg
E--> 50                  85                  90                  95
     51 Pro Pro Ser Gly Gly Ser Gly Leu Gly Gly Asp Gly Gly Gly Cys
E--> 52 Gly
E--> 53             100                 105                 110
```

Amino acid format is not acceptable

Amino acid numbering must be aligned beneath each row of amino acids.

It is preferred that amino sequences are arranged 16 amino acids per line.

The type of errors shown exist throughout the Sequence Listing. Please check subsequent sequences for similar errors.

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     54 Gly Gly Gly Ser Gly Gly Gly Gly Ala Pro Arg Arg Glu Pro Val
E--> 55 Pro
E--> 56         115                 120                 125
     57 Phe Pro Ser Gly Ser Ala Gly Pro Gly Pro Arg Gly Pro Arg Ala
E--> 58 Thr
E--> 59     130                 135                 140
     60 Glu Ser Gly Lys Arg Met Asp Cys Pro Ala Leu Pro Pro Gly Trp
E--> 61 Lys
E--> 62 145                 150                 155
E--> 63  160
     64 Lys Glu Glu Val Ile Arg Lys Ser Gly Leu Ser Ala Gly Lys Ser
E--> 65 Asp
E--> 66                 165                 170                 175
     67 Val Tyr Tyr Phe Ser Pro Ser Gly Lys Lys Phe Arg Ser Lys Pro
E--> 68 Gln
E--> 69             180                 185                 190
     70 Leu Ala Arg Tyr Leu Gly Asn Thr Val Asp Leu Ser Ser Phe Asp
E--> 71 Phe
E--> 72         195                 200                 205
     73 Arg Thr Gly Lys Met Met Pro Ser Lys Leu Gln Lys Asn Lys Gln
E--> 74 Arg
E--> 75     210                 215                 220
     76 Leu Arg Asn Asp Pro Leu Asn Gln Asn Lys Gly Lys Pro Asp Leu
E--> 77 Asn
E--> 78 225                 230                 235
E--> 79  240
     80 Thr Thr Leu Pro Ile Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro
E--> 81 Val
E--> 82                 245                 250                 255
     83 Thr Lys Val Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro
E--> 84 Gln
E--> 85             260                 265                 270
     86 Arg Met Asn Glu Gln Pro Arg Gln Leu Phe Trp Glu Lys Arg Leu
E--> 87 Gln
E--> 88         275                 280                 285
     89 Gly Leu Ser Ala Ser Asp Val Thr Glu Gln Ile Ile Lys Thr Met
E--> 90 Glu
E--> 91     290                 295                 300
     92 Leu Pro Lys Gly Leu Gln Gly Val Gly Pro Gly Ser Asn Asp Glu
E--> 93 Thr
E--> 94 305                 310                 315
E--> 95  320
     96 Leu Leu Ser Ala Val Ala Ser Ala Leu His Thr Ser Ser Ala Pro
E--> 97 Ile
E--> 98                 325                 330                 335
     99 Thr Gly Gln Val Ser Ala Ala Val Glu Lys Asn Pro Ala Val Trp
E--> 100 Leu
E--> 101             340                 345                 350
     102 Asn Thr Ser Gln Pro Leu Cys Lys Ala Phe Ile Val Thr Asp Glu
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 103 Asp
E--> 104         355                 360                 365
     105 Ile Arg Lys Gln Glu Glu Arg Val Gln Gln Val Arg Lys Lys Leu
E--> 106 Glu
E--> 107     370                 375                 380
     108 Glu Ala Leu Met Ala Asp Ile Leu Ser Arg Ala Ala Asp Thr Glu
E--> 109 Glu
E--> 110 385                 390                 395
E--> 111  400
     112 Met Asp Ile Glu Met Asp Ser Gly Asp Glu Ala
E--> 113                 405                 410
     114 <210> SEQ ID NO: 2
     115 <211> LENGTH: 1233
     116 <212> TYPE: DNA
     117 <213> ORGANISM: Homo sapiens
W--> 118 <220> FEATURE:
     119 <221> NAME/KEY: CDS
     120 <223> OTHER INFORMATION: (1)..(1236)
W--> 121 <400> SEQUENCE: 2
E--> 122 atg cgc gcg cac ccg ggg gga ggc cgc tgc tgc ccg gag cag gag
     123 gag   48
     124 Met Arg Ala His Pro Gly Gly Gly Arg Cys Cys Pro Glu Gln Glu
W--> 125 Glu
W--> 126   1               5                  10                  15
E--> 127 ggg gag agt gcg gcg ggc ggc agc ggc gct ggc ggc gac tcc gcc
     128 ata   96
     129 Gly Glu Ser Ala Ala Gly Gly Ser Gly Ala Gly Gly Asp Ser Ala
W--> 130 Ile
W--> 131             20                  25                  30
E--> 132 gag cag ggg ggc cag ggc agc gcg ctc gcc ccg tcc ccg gtg agc
     133 ggc   144
     134 Glu Gln Gly Gly Gln Gly Ser Ala Leu Ala Pro Ser Pro Val Ser
W--> 135 Gly
W--> 136          35                  40                  45
E--> 137 gtg cgc agg gaa ggc gct cgg ggc ggc ggc cgt ggc cgg ggg cgg
     138 tgg   192
     139 Val Arg Arg Glu Gly Ala Arg Gly Gly Gly Arg Gly Arg Gly Arg
W--> 140 Trp
W--> 141      50                  55                  60
E--> 142 aag cag gcg ggc cgg ggc ggc ggc gtc tgt ggc cgt ggc cgg ggc
     143 cgg   240
     144 Lys Gln Ala Gly Arg Gly Gly Gly Val Cys Gly Arg Gly Arg Gly
W--> 145 Arg
W--> 146  65                  70                  75
E--> 147   80
E--> 148 ggc cgt ggc cgg gga cgg gga cgg ggc cgg ggc cgg ggc cgc ggc
     149 cgt   288
     150 Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly Arg Gly
W--> 151 Arg
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 152                  85                  90                  95
E--> 153 ccc ccg agt ggc ggc agc ggc ctt ggc ggc gac ggc ggc ggc tgc
     154 ggc   336
     155 Pro Pro Ser Gly Gly Ser Gly Leu Gly Gly Asp Gly Gly Gly Cys
W--> 156 Gly
W--> 157             100                 105                 110
E--> 158 ggc ggc ggc agc ggt ggc ggc ggc gcc ccc cgg cgg gag ccg gtc
     159 cct   384
     160 Gly Gly Gly Ser Gly Gly Gly Gly Ala Pro Arg Arg Glu Pro Val
W--> 161 Pro
W--> 162         115                 120                 125
E--> 163 ttc ccg tcg ggg agc gcg ggg ccg ggg ccc agg gga ccc cgg gcc
     164 acg   432
     165 Phe Pro Ser Gly Ser Ala Gly Pro Gly Pro Arg Gly Pro Arg Ala
W--> 166 Thr
W--> 167     130                 135                 140
E--> 168 gag agc ggg aag agg atg gat tgc ccg gcc ctc ccc ccc gga tgg
     169 aag   480
     170 Glu Ser Gly Lys Arg Met Asp Cys Pro Ala Leu Pro Pro Gly Trp
W--> 171 Lys
W--> 172 145                 150                 155
E--> 173  160
E--> 174 aag gag gaa gtg atc cga aaa tct ggg cta agt gct ggc aag agc
     175 gat   528
     176 Lys Glu Glu Val Ile Arg Lys Ser Gly Leu Ser Ala Gly Lys Ser
W--> 177 Asp
W--> 178                 165                 170                 175
E--> 179 gtc tac tac ttc agt cca agt ggt aag aag ttc aga agc aag cct
     180 cag   576
     181 Val Tyr Tyr Phe Ser Pro Ser Gly Lys Lys Phe Arg Ser Lys Pro
W--> 182 Gln
W--> 183             180                 185                 190
E--> 184 ttg gca agg tac ctg gga aat act gtt gat ctc agc agt ttt gac
     185 ttc   624
     186 Leu Ala Arg Tyr Leu Gly Asn Thr Val Asp Leu Ser Ser Phe Asp
W--> 187 Phe
W--> 188         195                 200                 205
E--> 189 aga act gga aag atg atg cct agt aaa tta cag aag aac aaa cag
     190 aga   672
     191 Arg Thr Gly Lys Met Met Pro Ser Lys Leu Gln Lys Asn Lys Gln
W--> 192 Arg
W--> 193     210                 215                 220
E--> 194 ctg cga aac gat cct ctc aat caa aat aag ggt aaa cca gac ttg
     195 aat   720
     196 Leu Arg Asn Asp Pro Leu Asn Gln Asn Lys Gly Lys Pro Asp Leu
W--> 197 Asn
W--> 198 225                 230                 235
E--> 199  240
E--> 200 aca aca ttg cca att aga caa aca gca tca att ttc aaa caa ccg
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     201 gta   768
     202 Thr Thr Leu Pro Ile Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro
W--> 203 Val
W--> 204                 245                 250                 255
E--> 205 acc aaa gtc aca aat cat cct agt aat aaa gtg aaa tca gac cca
     206 caa   816
     207 Thr Lys Val Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro
W--> 208 Gln
W--> 209             260                 265                 270
E--> 210 cga atg aat gaa cag cca cgt cag ctt ttc tgg gag aag agg cta
     211 caa   864
     212 Arg Met Asn Glu Gln Pro Arg Gln Leu Phe Trp Glu Lys Arg Leu
W--> 213 Gln
W--> 214         275                 280                 285
E--> 215 gga ctt agt gca tca gat gta aca gaa caa att ata aaa acc atg
     216 gaa   912
     217 Gly Leu Ser Ala Ser Asp Val Thr Glu Gln Ile Ile Lys Thr Met
W--> 218 Glu
W--> 219     290                 295                 300
E--> 220 cta ccc aaa ggt ctt caa gga gtt ggt cca ggt agc aat gat gag
     221 acc   960
     222 Leu Pro Lys Gly Leu Gln Gly Val Gly Pro Gly Ser Asn Asp Glu
W--> 223 Thr
W--> 224 305                 310                 315
E--> 225  320
E--> 226 ctt tta tct gct gtt gcc agt gct ttg cac aca agc tct gcg cca
     227 atc   1008
     228 Leu Leu Ser Ala Val Ala Ser Ala Leu His Thr Ser Ser Ala Pro
W--> 229 Ile
W--> 230                 325                 330                 335
E--> 231 aca ggg caa gtc tcc gct gct gtg gaa aag aac cct gct gtt tgg
     232 ctt   1056
     233 Thr Gly Gln Val Ser Ala Ala Val Glu Lys Asn Pro Ala Val Trp
W--> 234 Leu
W--> 235             340                 345                 350
E--> 236 aac aca tct caa ccc ctc tgc aaa gct ttt att gtc aca gat gaa
     237 gac   1104
     238 Asn Thr Ser Gln Pro Leu Cys Lys Ala Phe Ile Val Thr Asp Glu
W--> 239 Asp
W--> 240         355                 360                 365
E--> 241 atc agg aaa cag gaa gag cga gta cag caa gta cgc aag aaa ttg
     242 gaa   1152
     243 Ile Arg Lys Gln Glu Glu Arg Val Gln Gln Val Arg Lys Lys Leu
W--> 244 Glu
W--> 245     370                 375                 380
E--> 246 gaa gca ctg atg gca gac atc ttg tcg cga gct gct gat aca gaa
     247 gag   1200
     248 Glu Ala Leu Met Ala Asp Ile Leu Ser Arg Ala Ala Asp Thr Glu
W--> 249 Glu
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 250 385                 390                 395
E--> 251  400
E--> 252 atg gat att gaa atg gac agt gga gat gaa gcc
     253        1233
     254 Met Asp Ile Glu Met Asp Ser Gly Asp Glu Ala
W--> 255                405                 410
     256 <210> SEQ ID NO: 3
     257 <211> LENGTH: 196
     258 <212> TYPE: PRT
     259 <213> ORGANISM: Homo sapiens
W--> 260 <400> SEQUENCE: 3
     261 Met Arg Thr Leu Ala Cys Leu Leu Leu Leu Gly Cys Gly Tyr Leu
E--> 262 Ala
E--> 263   1               5                  10                  15
     264 His Val Leu Ala Glu Glu Ala Glu Ile Pro Arg Glu Val Ile Glu
E--> 265 Arg
E--> 266              20                  25                  30
     267 Leu Ala Arg Ser Gln Ile His Ser Ile Arg Asp Leu Gln Arg Leu
E--> 268 Leu
E--> 269          35                  40                  45
     270 Glu Ile Asp Ser Val Gly Ser Glu Asp Ser Leu Asp Thr Ser Leu
E--> 271 Arg
E--> 272      50                  55                  60
     273 Ala His Gly Val His Ala Thr Lys His Val Pro Glu Lys Arg Pro
E--> 274 Leu
E--> 275  65                  70                  75
E--> 276   80
     277 Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Val Pro Ala Val
E--> 278 Cys
E--> 279                   85                  90                  95
     280 Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp
E--> 281 Pro
E--> 282             100                 105                 110
     283 Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys
E--> 284 Arg
E--> 285         115                 120                 125
     286 Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser
E--> 287 Arg
E--> 288     130                 135                 140
     289 Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg
E--> 290 Lys
E--> 291 145                 150                 155
E--> 292  160
     293 Lys Pro Lys Leu Lys Glu Val Gln Val Arg Leu Glu Glu His Leu
E--> 294 Glu
E--> 295                 165                 170                 175
     296 Cys Ala Cys Ala Thr Thr Ser Leu Asn Pro Asp Tyr Arg Glu Glu
E--> 297 Asp
E--> 298             180                 185                 190
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     299 Thr Asp Val Arg
E--> 300         195
     301 <210> SEQ ID NO: 4
     302 <211> LENGTH: 588
     303 <212> TYPE: DNA
     304 <213> ORGANISM: Homo sapiens
W--> 305 <220> FEATURE:
     306 <221> NAME/KEY: CDS
     307 <223> OTHER INFORMATION: (1)..(591)
W--> 308 <400> SEQUENCE: 4
E--> 309 atg agg acc ttg gct tgc ctg ctg ctc ctc ggc tgc gga tac ctc
     310 gcc   48
     311 Met Arg Thr Leu Ala Cys Leu Leu Leu Leu Gly Cys Gly Tyr Leu
W--> 312 Ala
W--> 313   1               5                  10                  15
E--> 314 cat gtt ctg gcc gag gaa gcc gag atc ccc cgc gag gtg atc gag
     315 agg   96
     316 His Val Leu Ala Glu Glu Ala Glu Ile Pro Arg Glu Val Ile Glu
W--> 317 Arg
W--> 318             20                  25                  30
E--> 319 ctg gcc cgc agt cag atc cac agc atc cgg gac ctc cag cga ctc
     320 ctg   144
     321 Leu Ala Arg Ser Gln Ile His Ser Ile Arg Asp Leu Gln Arg Leu
W--> 322 Leu
W--> 323          35                  40                  45
E--> 324 gag ata gac tcc gta ggg agt gag gat tct ttg gac acc agc ctg
     325 aga   192
     326 Glu Ile Asp Ser Val Gly Ser Glu Asp Ser Leu Asp Thr Ser Leu
W--> 327 Arg
W--> 328      50                  55                  60
E--> 329 gct cac ggg gtc cac gcc act aag cat gtg ccc gag aag cgg ccc
     330 ctg   240
     331 Ala His Gly Val His Ala Thr Lys His Val Pro Glu Lys Arg Pro
W--> 332 Leu
W--> 333  65                  70                  75
E--> 334   80
E--> 335 ccc att cgg agg aag aga agc atc gag gaa gct gtc ccc gct gtc
     336 tgc   288
     337 Pro Ile Arg Arg Lys Arg Ser Ile Glu Glu Ala Val Pro Ala Val
W--> 338 Cys
W--> 339                  85                  90                  95
E--> 340 aag acc agg acg gtc att tac gag att cct cgg agt cag gtc gac
     341 ccc   336
     342 Lys Thr Arg Thr Val Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp
W--> 343 Pro
W--> 344             100                 105                 110
E--> 345 acg tcc gcc aac ttc ctg atc tgg ccc ccg tgc gtg gag gtg aaa
     346 cgc   384
     347 Thr Ser Ala Asn Phe Leu Ile Trp Pro Pro Cys Val Glu Val Lys
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 348 Arg
W--> 349         115                 120                 125
E--> 350 tgc acc ggc tgc tgc aac acg agc agt gtc aag tgc cag ccc tcc
     351 cgc   432
     352 Cys Thr Gly Cys Cys Asn Thr Ser Ser Val Lys Cys Gln Pro Ser
W--> 353 Arg
W--> 354     130                 135                 140
E--> 355 gtc cac cac cgc agc gtc aag gtg gcc aag gtg gaa tac gtc agg
     356 aag   480
     357 Val His His Arg Ser Val Lys Val Ala Lys Val Glu Tyr Val Arg
W--> 358 Lys
W--> 359 145                 150                 155
E--> 360  160
E--> 361 aag cca aaa tta aaa gaa gtc cag gtg agg tta gag gag cat ttg
     362 gag   528
     363 Lys Pro Lys Leu Lys Glu Val Gln Val Arg Leu Glu Glu His Leu
W--> 364 Glu
W--> 365               165                 170                 175
E--> 366 tgc gcc tgc gcg acc aca agc ctg aat ccg gat tat cgg gaa gag
     367 gac   576
     368 Cys Ala Cys Ala Thr Thr Ser Leu Asn Pro Asp Tyr Arg Glu Glu
W--> 369 Asp
W--> 370             180                 185                 190
E--> 371 acg gat gtg agg
     372        588
     373 Thr Asp Val Arg
W--> 374         195
     375 <210> SEQ ID NO: 5
     376 <211> LENGTH: 241
     377 <212> TYPE: PRT
     378 <213> ORGANISM: Homo sapiens
W--> 379 <400> SEQUENCE: 5
     380 Met Asn Arg Cys Trp Ala Leu Phe Leu Ser Leu Cys Cys Tyr Leu
E--> 381 Arg
E--> 382   1               5                  10                  15
     383 Leu Val Ser Ala Glu Gly Asp Pro Ile Pro Glu Glu Leu Tyr Glu
E--> 384 Met
E--> 385              20                  25                  30
     386 Leu Ser Asp His Ser Ile Arg Ser Phe Asp Asp Leu Gln Arg Leu
E--> 387 Leu
E--> 388          35                  40                  45
     389 His Gly Asp Pro Gly Glu Glu Asp Gly Ala Glu Leu Asp Leu Asn
E--> 390 Met
E--> 391      50                  55                  60
     392 Thr Arg Ser His Ser Gly Gly Glu Leu Glu Ser Leu Ala Arg Gly
E--> 393 Arg
E--> 394  65                  70                  75
E--> 395   80
     396 Arg Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 397 Glu
E--> 398                  85                  90                  95
     399 Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile
E--> 400 Asp
E--> 401             100                 105                 110
     402 Arg Thr Asn Ala Asn Phe Leu Val Trp Pro Pro Cys Val Glu Val
E--> 403 Gln
E--> 404         115                 120                 125
     405 Arg Cys Ser Gly Cys Cys Asn Asn Arg Asn Val Gln Cys Arg Pro
E--> 406 Thr
E--> 407     130                 135                 140
     408 Gln Val Gln Leu Arg Pro Val Gln Val Arg Lys Ile Glu Ile Val
E--> 409 Arg
E--> 410 145                 150                 155
E--> 411  160
     412 Lys Lys Pro Ile Phe Lys Lys Ala Thr Val Thr Leu Glu Asp His
E--> 413 Leu
E--> 414                 165                 170                 175
     415 Ala Cys Lys Cys Glu Thr Val Ala Ala Ala Arg Pro Val Thr Arg
E--> 416 Ser
E--> 417             180                 185                 190
     418 Pro Gly Gly Ser Gln Glu Gln Arg Ala Lys Thr Pro Gln Thr Arg
E--> 419 Val
E--> 420         195                 200                 205
     421 Thr Ile Arg Thr Val Arg Val Arg Arg Pro Pro Lys Gly Lys His
E--> 422 Arg
E--> 423     210                 215                 220
     424 Lys Phe Lys His Thr His Asp Lys Thr Ala Leu Lys Glu Thr Leu
E--> 425 Gly
E--> 426 225                 230                 235
E--> 427  240
     428 Ala
     429 <210> SEQ ID NO: 6
     430 <211> LENGTH: 723
     431 <212> TYPE: DNA
     432 <213> ORGANISM: Homo sapiens
W--> 433 <220> FEATURE:
     434 <221> NAME/KEY: CDS
     435 <223> OTHER INFORMATION: (1)..(726)
W--> 436 <400> SEQUENCE: 6
E--> 437 atg aat cgc tgc tgg gcg ctc ttc ctg tct ctc tgc tgc tac ctg
     438 cgt   48
     439 Met Asn Arg Cys Trp Ala Leu Phe Leu Ser Leu Cys Cys Tyr Leu
W--> 440 Arg
W--> 441   1               5                  10                  15
E--> 442 ctg gtc agc gcc gag ggg gac ccc att ccc gag gag ctt tat gag
     443 atg   96
     444 Leu Val Ser Ala Glu Gly Asp Pro Ile Pro Glu Glu Leu Tyr Glu
W--> 445 Met
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 446              20                  25                  30
E--> 447 ctg agt gac cac tcg atc cgc tcc ttt gat gat ctc caa cgc ctg
     448 ctg   144
     449 Leu Ser Asp His Ser Ile Arg Ser Phe Asp Asp Leu Gln Arg Leu
W--> 450 Leu
W--> 451          35                  40                  45
E--> 452 cac gga gac ccc gga gag gaa gat ggg gcc gag ttg gac ctg aac
     453 atg   192
     454 His Gly Asp Pro Gly Glu Glu Asp Gly Ala Glu Leu Asp Leu Asn
W--> 455 Met
W--> 456      50                  55                  60
E--> 457 acc cgc tcc cac tct gga ggc gag ctg gag agc ttg gct cgt gga
     458 aga   240
     459 Thr Arg Ser His Ser Gly Gly Glu Leu Glu Ser Leu Ala Arg Gly
W--> 460 Arg
W--> 461  65                  70                  75
E--> 462   80
E--> 463 agg agc ctg ggt tcc ctg acc att gct gag ccg gcc atg atc gcc
     464 gag   288
     465 Arg Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala
W--> 466 Glu
W--> 467                  85                  90                  95
E--> 468 tgc aag acg cgc acc gag gtg ttc gag atc tcc cgg cgc ctc ata
     469 gac   336
     470 Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile
W--> 471 Asp
W--> 472             100                 105                 110
E--> 473 cgc acc aac gcc aac ttc ctg gtg tgg ccg ccc tgt gtg gag gtg
     474 cag   384
     475 Arg Thr Asn Ala Asn Phe Leu Val Trp Pro Pro Cys Val Glu Val
W--> 476 Gln
W--> 477         115                 120                 125
E--> 478 cgc tgc tcc ggc tgc tgc aac aac cgc aac gtg cag tgc cgc ccc
     479 acc   432
     480 Arg Cys Ser Gly Cys Cys Asn Asn Arg Asn Val Gln Cys Arg Pro
W--> 481 Thr
W--> 482     130                 135                 140
E--> 483 cag gtg cag ctg cga cct gtc cag gtg aga aag atc gag att gtg
     484 cgg   480
     485 Gln Val Gln Leu Arg Pro Val Gln Val Arg Lys Ile Glu Ile Val
W--> 486 Arg
W--> 487 145                 150                 155
E--> 488  160
E--> 489 aag aag cca atc ttt aag aag gcc acg gtg acg ctg gaa gac cac
     490 ctg   528
     491 Lys Lys Pro Ile Phe Lys Lys Ala Thr Val Thr Leu Glu Asp His
W--> 492 Leu
W--> 493                 165                 170                 175
E--> 494 gca tgc aag tgt gag aca gtg gca gct gca cgg cct gtg acc cga
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     495 agc   576
     496 Ala Cys Lys Cys Glu Thr Val Ala Ala Ala Arg Pro Val Thr Arg
W--> 497 Ser
W--> 498             180                 185                 190
E--> 499 ccg ggg ggt tcc cag gag cag cga gcc aaa acg ccc caa act cgg
     500 gtg   624
     501 Pro Gly Gly Ser Gln Glu Gln Arg Ala Lys Thr Pro Gln Thr Arg
W--> 502 Val
W--> 503         195                 200                 205
E--> 504 acc att cgg acg gtg cga gtc cgc cgg ccc ccc aag ggc aag cac
     505 cgg   672
     506 Thr Ile Arg Thr Val Arg Val Arg Arg Pro Pro Lys Gly Lys His
W--> 507 Arg
W--> 508     210                 215                 220
E--> 509 aaa ttc aag cac acg cat gac aag acg gca ctg aag gag acc ctt
     510 gga   720
     511 Lys Phe Lys His Thr His Asp Lys Thr Ala Leu Lys Glu Thr Leu
W--> 512 Gly
W--> 513 225                 230                 235
E--> 514  240
E--> 515 gcc
     516        723
     517 Ala
     518 <210> SEQ ID NO: 7
     519 <211> LENGTH: 155
     520 <212> TYPE: PRT
     521 <213> ORGANISM: Homo sapiens
W--> 522 <400> SEQUENCE: 7
     523 Met Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp
E--> 524 Gly
E--> 525   1               5                  10                  15
     526 Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg
E--> 527 Leu
E--> 528             20                  25                  30
     529 Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly
E--> 530 Arg
E--> 531          35                  40                  45
     532 Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln
E--> 533 Leu
E--> 534      50                  55                  60
     535 Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala
E--> 536 Asn
E--> 537  65                  70                  75
E--> 538   80
     539 Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys
E--> 540 Cys
E--> 541                 85                  90                  95
     542 Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn
E--> 543 Tyr
```

amino numbering must appear beneath amino strings

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 544              100                 105                 110
     545 Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu
E--> 546 Lys
E--> 547         115                 120                 125
     548 Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln
E--> 549 Lys
E--> 550     130                 135                 140
     551 Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
E--> 552 145                 150
     553 <210> SEQ ID NO: 8
     554 <211> LENGTH: 465
     555 <212> TYPE: DNA
     556 <213> ORGANISM: Homo sapiens
W--> 557 <220> FEATURE:
     558 <221> NAME/KEY: CDS
     559 <223> OTHER INFORMATION: (1)..(468)
W--> 560 <400> SEQUENCE: 8
E--> 561 atg gca gcc ggg agc atc acc acg ctg ccc gcc ttg ccc gag gat
     562 ggc   48
     563 Met Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp
W--> 564 Gly
W--> 565   1               5                  10                  15
E--> 566 ggc agc ggc gcc ttc ccg ccc ggc cac ttc aag gac ccc aag cgg
     567 ctg   96
     568 Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg
W--> 569 Leu
W--> 570             20                  25                  30
E--> 571 tac tgc aaa aac ggg ggc ttc ttc ctg cgc atc cac ccc gac ggc
     572 cga   144
     573 Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly
W--> 574 Arg
W--> 575          35                  40                  45
E--> 576 gtt gac ggg gtc cgg gag aag agc gac cct cac atc aag cta caa
     577 ctt   192
     578 Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln
W--> 579 Leu
W--> 580      50                  55                  60
E--> 581 caa gca gaa gag aga gga gtt gtg tct atc aaa gga gtg tgt gct
     582 aac   240
     583 Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala
W--> 584 Asn
W--> 585 65                  70                  75
E--> 586   80
E--> 587 cgt tac ctg gct atg aag gaa gat gga aga tta ctg gct tct aaa
     588 tgt   288
     589 Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys
W--> 590 Cys
W--> 591                 85                  90                  95
E--> 592 gtt acg gat gag tgt ttc ttt ttt gaa cga ttg gaa tct aat aac
```

amino numbering must appear beneath amino strings

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     593 tac   336
     594 Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn
W--> 595 Tyr
W--> 596             100                 105                 110
E--> 597 aat act tac cgg tca agg aaa tac acc agt tgg tat gtg gca ttg
     598 aaa   384
     599 Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu
W--> 600 Lys
W--> 601         115                 120                 125
E--> 602 cga act ggg cag tat aaa ctt gga tcc aaa aca gga cct ggg cag
     603 aaa   432
     604 Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln
W--> 605 Lys
W--> 606     130                 135                 140
E--> 607 gct ata ctt ttt ctt cca atg tct gct aag agc
     608        465
     609 Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
W--> 610 145                 150                 155
     611 <210> SEQ ID NO: 9
     612 <211> LENGTH: 324
     613 <212> TYPE: PRT
     614 <213> ORGANISM: Homo sapiens
W--> 615 <400> SEQUENCE: 9
     616 Met Phe Pro Ser Pro Ala Leu Thr Pro Thr Pro Phe Ser Val Lys
E--> 617 Asp
E--> 618   1               5                  10                  15
     619 Ile Leu Asn Leu Glu Gln Gln Gln Arg Ser Leu Ala Ala Ala Gly
E--> 620 Glu
E--> 621             20                  25                  30
     622 Leu Ser Ala Arg Leu Glu Ala Thr Leu Ala Pro Ser Ser Cys Met
E--> 623 Leu
E--> 624          35                  40                  45
     625 Ala Ala Phe Lys Pro Glu Ala Tyr Ala Gly Pro Glu Ala Ala Ala
E--> 626 Pro
E--> 627      50                  55                  60
     628 Gly Leu Pro Glu Leu Arg Ala Glu Leu Gly Arg Ala Pro Ser Pro
E--> 629 Ala
E--> 630  65                  70                  75
E--> 631   80
     632 Lys Cys Ala Ser Ala Phe Pro Ala Ala Pro Ala Phe Tyr Pro Arg
E--> 633 Ala
E--> 634                  85                  90                  95
     635 Tyr Ser Asp Pro Asp Pro Ala Lys Asp Pro Arg Ala Glu Lys Lys
E--> 636 Glu
E--> 637             100                 105                 110
     638 Leu Cys Ala Leu Gln Lys Ala Val Glu Leu Glu Lys Thr Glu Ala
E--> 639 Asp
E--> 640          115                 120                 125
     641 Asn Ala Glu Arg Pro Arg Ala Arg Arg Arg Arg Lys Pro Arg Val
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 642 Leu
E--> 643     130                 135                 140
     644 Phe Ser Gln Ala Gln Val Tyr Glu Leu Glu Arg Arg Phe Lys Gln
E--> 645 Gln
E--> 646 145                 150                 155
E--> 647  160
     648 Arg Tyr Leu Ser Ala Pro Glu Arg Asp Gln Leu Ala Ser Val Leu
E--> 649 Lys
E--> 650                 165                 170                 175
     651 Leu Thr Ser Thr Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr
E--> 652 Lys
E--> 653             180                 185                 190
     654 Cys Lys Arg Gln Arg Gln Asp Gln Thr Leu Glu Leu Val Gly Leu
E--> 655 Pro
E--> 656         195                 200                 205
     657 Pro Pro Pro Pro Pro Pro Ala Arg Arg Ile Ala Val Pro Val Leu
E--> 658 Val
E--> 659     210                 215                 220
     660 Arg Asp Gly Lys Pro Cys Leu Gly Asp Ser Ala Pro Tyr Ala Pro
E--> 661 Ala
E--> 662 225                 230                 235
E--> 663  240
     664 Tyr Gly Val Gly Leu Asn Pro Tyr Gly Tyr Asn Ala Tyr Pro Ala
E--> 665 Tyr
E--> 666                 245                 250                 255
     667 Pro Gly Tyr Gly Gly Ala Ala Cys Ser Pro Gly Tyr Ser Cys Thr
E--> 668 Ala
E--> 669             260                 265                 270
     670 Ala Tyr Pro Ala Gly Pro Ser Pro Ala Gln Pro Ala Thr Ala Ala
E--> 671 Ala
E--> 672         275                 280                 285
     673 Asn Asn Asn Phe Val Asn Phe Gly Val Gly Asp Leu Asn Ala Val
E--> 674 Gln
E--> 675     290                 295                 300
     676 Ser Pro Gly Ile Pro Gln Ser Asn Ser Gly Val Ser Thr Leu His
E--> 677 Gly
E--> 678 305                 310                 315
E--> 679  320
     680 Ile Arg Ala Trp
     682 <210> SEQ ID NO: 10
     683 <211> LENGTH: 972
     684 <212> TYPE: DNA
     685 <213> ORGANISM: Homo sapiens
W--> 686 <220> FEATURE:
     687 <221> NAME/KEY: CDS
     688 <223> OTHER INFORMATION: (1)..(975)
W--> 689 <400> SEQUENCE: 10
E--> 690 atg ttc ccc agc cct gct ctc acg ccc acg ccc ttc tca gtc aaa
     691 gac   48
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     692 Met Phe Pro Ser Pro Ala Leu Thr Pro Thr Pro Phe Ser Val Lys
W--> 693 Asp
W--> 694   1               5                  10                  15
E--> 695 atc cta aac ctg gaa cag cag cag cgc agc ctg gct gcc gcc gga
     696 gag   96
     697 Ile Leu Asn Leu Glu Gln Gln Gln Arg Ser Leu Ala Ala Ala Gly
W--> 698 Glu
W--> 699             20                  25                  30
E--> 700 ctc tct gcc cgc ctg gag gcg acc ctg gcg ccc tcc tcc tgc atg
     701 ctg   144
     702 Leu Ser Ala Arg Leu Glu Ala Thr Leu Ala Pro Ser Ser Cys Met
W--> 703 Leu
W--> 704          35                  40                  45
E--> 705 gcc gcc ttc aag cca gag gcc tac gct ggg ccc gag gcg gct gcg
     706 ccg   192
     707 Ala Ala Phe Lys Pro Glu Ala Tyr Ala Gly Pro Glu Ala Ala Ala
W--> 708 Pro
W--> 709      50                  55                  60
E--> 710 ggc ctc cca gag ctg cgc gca gag ctg ggc cgc gcg cct tca ccg
     711 gcc   240
     712 Gly Leu Pro Glu Leu Arg Ala Glu Leu Gly Arg Ala Pro Ser Pro
W--> 713 Ala
W--> 714  65                  70                  75
E--> 715   80
E--> 716 aag tgt gcg tct gcc ttt ccc gcc gcc ccc gcc ttc tat cca cgt
     717 gcc   288
     718 Lys Cys Ala Ser Ala Phe Pro Ala Ala Pro Ala Phe Tyr Pro Arg
W--> 719 Ala
W--> 720                  85                  90                  95
E--> 721 tac agc gac ccc gac cca gcc aag gac cct aga gcc gaa aag aaa
     722 gag   336
     723 Tyr Ser Asp Pro Asp Pro Ala Lys Asp Pro Arg Ala Glu Lys Lys
W--> 724 Glu
W--> 725             100                 105                 110
E--> 726 ctg tgc gcg ctg cag aag gcg gtg gag ctg gag aag aca gag gcg
     727 gac   384
     728 Leu Cys Ala Leu Gln Lys Ala Val Glu Leu Glu Lys Thr Glu Ala
W--> 729 Asp
W--> 730         115                 120                 125
E--> 731 aac gcg gag cgg ccc cgg gcg cga cgg cgg agg aag ccg cgc gtg
     732 ctc   432
     733 Asn Ala Glu Arg Pro Arg Ala Arg Arg Arg Arg Lys Pro Arg Val
W--> 734 Leu
W--> 735     130                 135                 140
E--> 736 ttc tcg cag gcg cag gtc tat gag ctg gag cgg cgc ttc aag cag
     737 cag   480
     738 Phe Ser Gln Ala Gln Val Tyr Glu Leu Glu Arg Arg Phe Lys Gln
W--> 739 Gln
W--> 740 145                 150                 155
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 741  160
E--> 742 cgg tac ctg tcg gcc ccc gaa cgc gac cag ctg gcc agc gtg ctg
     743 aaa   528
     744 Arg Tyr Leu Ser Ala Pro Glu Arg Asp Gln Leu Ala Ser Val Leu
W--> 745 Lys
W--> 746                 165                 170                 175
E--> 747 ctc acg tcc acg cag gtc aag atc tgg ttc cag aac cgg cgc tac
     748 aag   576
     749 Leu Thr Ser Thr Gln Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr
W--> 750 Lys
W--> 751             180                 185                 190
E--> 752 tgc aag cgg cag cgg cag gac cag act ctg gag ctg gtg ggg ctg
     753 ccc   624
     754 Cys Lys Arg Gln Arg Gln Asp Gln Thr Leu Glu Leu Val Gly Leu
W--> 755 Pro
W--> 756         195                 200                 205
E--> 757 ccg ccg ccg ccg ccg cct gcc cgc agg atc gcg gtg cca gtg ctg
     758 gtg   672
     759 Pro Pro Pro Pro Pro Pro Ala Arg Arg Ile Ala Val Pro Val Leu
W--> 760 Val
W--> 761     210                 215                 220
E--> 762 cgc gat ggc aag cca tgc cta ggg gac tcg gcg ccc tac gcg cct
     763 gcc   720
     764 Arg Asp Gly Lys Pro Cys Leu Gly Asp Ser Ala Pro Tyr Ala Pro
W--> 765 Ala
W--> 766 225                 230                 235
E--> 767  240
E--> 768 tac ggc gtg ggc ctc aat ccc tac ggt tat aac gcc tac ccc gcc
     769 tat   768
     770 Tyr Gly Val Gly Leu Asn Pro Tyr Gly Tyr Asn Ala Tyr Pro Ala
W--> 771 Tyr
W--> 772                 245                 250                 255
E--> 773 ccg ggt tac ggc ggc gcg gcc tgc agc cct ggc tac agc tgc act
     774 gcc   816
     775 Pro Gly Tyr Gly Gly Ala Ala Cys Ser Pro Gly Tyr Ser Cys Thr
W--> 776 Ala
W--> 777             260                 265                 270
E--> 778 gct tac ccc gcc ggg cct tcc cca gcg cag ccg gcc act gcc gcc
     779 gcc   864
     780 Ala Tyr Pro Ala Gly Pro Ser Pro Ala Gln Pro Ala Thr Ala Ala
W--> 781 Ala
W--> 782         275                 280                 285
E--> 783 aac aac aac ttc gtg aac ttc ggc gtc ggg gac ttg aat gcg gtt
     784 cag   912
     785 Asn Asn Asn Phe Val Asn Phe Gly Val Gly Asp Leu Asn Ala Val
W--> 786 Gln
W--> 787     290                 295                 300
E--> 788 agc ccc ggg att ccg cag agc aac tcg gga gtg tcc acg ctg cat
     789 ggt   960
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     790 Ser Pro Gly Ile Pro Gln Ser Asn Ser Gly Val Ser Thr Leu His
W--> 791 Gly
W--> 792 305                 310                 315
E--> 793  320
E--> 794 atc cga gcc tgg
     795        972
     796 Ile Arg Ala Trp
W--> 797             324
     798 <210> SEQ ID NO: 11
     799 <211> LENGTH: 442
     800 <212> TYPE: PRT
     801 <213> ORGANISM: Homo sapiens
W--> 802 <400> SEQUENCE: 11
     803 Met Tyr Gln Ser Leu Ala Met Ala Ala Asn His Gly Pro Pro Pro
E--> 804 Gly
E--> 805   1               5                  10                  15
     806 Ala Tyr Gln Ala Gly Gly Pro Gly Pro Phe Met His Gly Ala Gly
E--> 807 Ala
E--> 808            20                  25                  30
     809 Ala Ser Ser Pro Val Tyr Leu Pro Thr Pro Arg Val Pro Ser Ser
E--> 810 Val
E--> 811          35                  40                  45
     812 Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser
E--> 813 Gly
E--> 814      50                  55                  60
     815 Gly Pro Ser Gly Gly Ser Pro Gly Gly Ala Ala Ser Gly Ala Gly
E--> 816 Pro
E--> 817  65                  70                  75
E--> 818   80
     819 Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Thr
E--> 820 Gly
E--> 821                  85                  90                  95
     822 Ala Ala Tyr Thr Pro Pro Pro Val Ser Pro Arg Phe Ser Phe Pro
E--> 823 Gly
E--> 824             100                 105                 110
     825 Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg
E--> 826 Glu
E--> 827         115                 120                 125
     828 Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu
E--> 829 Ala
E--> 830     130                 135                 140
     831 Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser
E--> 832 Ser
E--> 833 145                 150                 155
E--> 834  160
     835 Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala
E--> 836 Ala
E--> 837                  165                 170                 175
     838 Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 839 Leu
E--> 840             180                 185                 190
     841 Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Asp Met
E--> 842 Phe
E--> 843         195                 200                 205
     844 Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met
E--> 845 Ser
E--> 846     210                 215                 220
     847 Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn
E--> 848 Ala
E--> 849 225                 230                 235
E--> 850  240
     851 Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile
E--> 852 Lys
E--> 853                 245                 250                 255
     854 Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys
E--> 855 Ala
E--> 856             260                 265                 270
     857 Asn Cys Gln Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu
E--> 858 Gly
E--> 859         275                 280                 285
     860 Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly
E--> 861 Val
E--> 862     290                 295                 300
     863 Pro Arg Pro Leu Ala Met Arg Lys Glu Gly Ile Gln Thr Arg Lys
E--> 864 Arg
E--> 865 305                 310                 315
E--> 866  320
     867 Lys Pro Lys Asn Leu Asn Lys Ser Lys Thr Pro Ala Ala Pro Ser
E--> 868 Gly
E--> 869                 325                 330                 335
     870 Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser
E--> 871 Asn
E--> 872             340                 345                 350
     873 Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu
E--> 874 Pro
E--> 875         355                 360                 365
     876 Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr
E--> 877 Phe
E--> 878     370                 375                 380
     879 Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val
E--> 880 Leu
E--> 881 385                 390                 395
E--> 882  400
     883 Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser
E--> 884 Gln
E--> 885                 405                 410                 415
     886 Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val
E--> 887 Leu
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 888              420                 425                 430
     889 Ala Asp Ser His Gly Asp Ile Ile Thr Ala
E--> 890         435                 440
     891 <210> SEQ ID NO: 12
     892 <211> LENGTH: 1326
     893 <212> TYPE: DNA
     894 <213> ORGANISM: Homo sapiens
W--> 895 <220> FEATURE:
     896 <221> NAME/KEY: CDS
     897 <223> OTHER INFORMATION: (1)..(1329)
W--> 898 <400> SEQUENCE: 12
E--> 899 atg tat cag agc ttg gcc atg gcc gcc aac cac ggg ccg ccc ccc
     900 ggt   48
     901 Met Tyr Gln Ser Leu Ala Met Ala Ala Asn His Gly Pro Pro Pro
W--> 902 Gly
W--> 903   1               5                  10                  15
E--> 904 gcc tac cag gcg ggc ggc ccc ggc ccc ttc atg cac ggc gcg ggc
     905 gcc   96
     906 Ala Tyr Gln Ala Gly Gly Pro Gly Pro Phe Met His Gly Ala Gly
W--> 907 Ala
W--> 908             20                  25                  30
E--> 909 gcg tcc tcg cca gtc tac ctg ccc aca ccg cgg gtg ccc tcc tcc
     910 gtt   144
     911 Ala Ser Ser Pro Val Tyr Leu Pro Thr Pro Arg Val Pro Ser Ser
W--> 912 Val
W--> 913          35                  40                  45
E--> 914 ctg ggc ctg tcc tac ctc cag ggc gga ggc gcg ggc tct gcg tcc
     915 gga   192
     916 Leu Gly Leu Ser Tyr Leu Gln Gly Gly Gly Ala Gly Ser Ala Ser
W--> 917 Gly
W--> 918      50                  55                  60
E--> 919 ggc ccc tcg ggc ggc agc ccc ggt ggg gcc gcg tct ggt gcg ggg
     920 ccc   240
     921 Gly Pro Ser Gly Gly Ser Pro Gly Gly Ala Ala Ser Gly Ala Gly
W--> 922 Pro
W--> 923  65                  70                  75
E--> 924   80
E--> 925 ggg acc cag cag ggc agc ccg gga tgg agc cag gcg gga gcg acc
     926 gga   288
     927 Gly Thr Gln Gln Gly Ser Pro Gly Trp Ser Gln Ala Gly Ala Thr
W--> 928 Gly
W--> 929                  85                  90                  95
E--> 930 gcc gct tac acc ccg ccg ccg gtg tcg ccg cgc ttc tcc ttc ccg
     931 ggg   336
     932 Ala Ala Tyr Thr Pro Pro Pro Val Ser Pro Arg Phe Ser Phe Pro
W--> 933 Gly
W--> 934             100                 105                 110
E--> 935 acc acc ggg tcc ctg gcg gcg gcg gcg gcg gct gcc gcc gcc cgg
     936 gaa   384
```

amino numbering must be aligned beneath protein strings

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     937 Thr Thr Gly Ser Leu Ala Ala Ala Ala Ala Ala Ala Ala Ala Arg
W--> 938 Glu
W--> 939         115                 120                 125
E--> 940 gct gcg gcc tac agc agt ggc ggc gga gcg gcg ggt gcg ggc ctg
     941 gcg   432
     942 Ala Ala Ala Tyr Ser Ser Gly Gly Gly Ala Ala Gly Ala Gly Leu
W--> 943 Ala
W--> 944     130                 135                 140
E--> 945 ggc cgc gag cag tac ggg cgc gcc ggc ttc gcg ggc tcc tac tcc
     946 agc   480
     947 Gly Arg Glu Gln Tyr Gly Arg Ala Gly Phe Ala Gly Ser Tyr Ser
W--> 948 Ser
W--> 949 145                 150                 155
E--> 950  160
E--> 951 ccc tac ccg gct tac atg gcc gac gtg ggc gcg tcc tgg gcc gca
     952 gcc   528
     953 Pro Tyr Pro Ala Tyr Met Ala Asp Val Gly Ala Ser Trp Ala Ala
W--> 954 Ala
W--> 955                 165                 170                 175
E--> 956 gcc gcc gcc tcc gcc ggc ccc ttc gac agc ccg gtc ctg cac agc
     957 ctg   576
     958 Ala Ala Ala Ser Ala Gly Pro Phe Asp Ser Pro Val Leu His Ser
W--> 959 Leu
W--> 960             180                 185                 190
E--> 961 ccc ggc cgg gcc aac ccg gcc gcc cga cac ccc aat ctc gat atg
     962 ttt   624
     963 Pro Gly Arg Ala Asn Pro Ala Ala Arg His Pro Asn Leu Asp Met
W--> 964 Phe
W--> 965         195                 200                 205
E--> 966 gac gac ttc tca gaa ggc aga gag tgt gtc aac tgt ggg gct atg
     967 tcc   672
     968 Asp Asp Phe Ser Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Met
W--> 969 Ser
W--> 970     210                 215                 220
E--> 971 acc ccg ctc tgg agg cga gat ggg acg ggt cac tat ctg tgc aac
     972 gcc   720
     973 Thr Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn
W--> 974 Ala
W--> 975 225                 230                 235
E--> 976  240
E--> 977 tgt ggc ctc tac cac aag atg aac ggc atc aac cgg ccg ctc atc
     978 aag   768
     979 Cys Gly Leu Tyr His Lys Met Asn Gly Ile Asn Arg Pro Leu Ile
W--> 980 Lys
W--> 981                 245                 250                 255
E--> 982 cct cag cgc cgg ctg tcc gcc tcc cgc cga gtg ggc ctc tcc tgt
     983 gcc   816
     984 Pro Gln Arg Arg Leu Ser Ala Ser Arg Arg Val Gly Leu Ser Cys
W--> 985 Ala
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 986              260                 265                 270
E--> 987 aac tgc cag acc acc acc acc acg ctg tgg cgc cgc aat gcg gag
     988 ggc   864
     989 Asn Cys Gln Thr Thr Thr Thr Thr Leu Trp Arg Arg Asn Ala Glu
W--> 990 Gly
W--> 991         275                 280                 285
E--> 992 gag cct gtg tgc aat gcc tgc ggc ctc tac atg aag ctc cac ggg
     993 gtg   912
     994 Glu Pro Val Cys Asn Ala Cys Gly Leu Tyr Met Lys Leu His Gly
W--> 995 Val
W--> 996     290                 295                 300
E--> 997 ccc agg cct ctt gca atg cgg aaa gag ggg atc caa acc aga aaa
     998 cgg   960
     999 Pro Arg Pro Leu Ala Met Arg Lys Glu Gly Ile Gln Thr Arg Lys
W--> 1000 Arg
W--> 1001 305                 310                 315
E--> 1002  320
E--> 1003 aag ccc aag aac ctg aat aaa tct aag aca cca gca gct cct tca
     1004 ggc   1008
     1005 Lys Pro Lys Asn Leu Asn Lys Ser Lys Thr Pro Ala Ala Pro Ser
W--> 1006 Gly
W--> 1007                 325                 330                 335
E--> 1008 agt gag agc ctt cct ccc gcc agc ggt gct tcc agc aac tcc agc
     1009 aac   1056
     1010 Ser Glu Ser Leu Pro Pro Ala Ser Gly Ala Ser Ser Asn Ser Ser
W--> 1011 Asn
W--> 1012             340                 345                 350
E--> 1013 gcc acc acc agc agc agc gag gag atg cgt ccc atc aag acg gag
     1014 cct   1104
     1015 Ala Thr Thr Ser Ser Ser Glu Glu Met Arg Pro Ile Lys Thr Glu
W--> 1016 Pro
W--> 1017         355                 360                 365
E--> 1018 ggc ctg tca tct cac tac ggg cac agc agc tcc gtg tcc cag acg
     1019 ttc   1152
     1020 Gly Leu Ser Ser His Tyr Gly His Ser Ser Ser Val Ser Gln Thr
W--> 1021 Phe
W--> 1022     370                 375                 380
E--> 1023 tca gtc agt gcg atg tct ggc cat ggg ccc tcc atc cac cct gtc
     1024 ctc   1200
     1025 Ser Val Ser Ala Met Ser Gly His Gly Pro Ser Ile His Pro Val
W--> 1026 Leu
W--> 1027 385                 390                 395
E--> 1028  400
E--> 1029 tcg gcc ctg aag ctc tcc cca caa ggc tat gcg tct ccc gtc agc
     1030 cag   1248
     1031 Ser Ala Leu Lys Leu Ser Pro Gln Gly Tyr Ala Ser Pro Val Ser
W--> 1032 Gln
W--> 1033                 405                 410                 415
E--> 1034 tct cca cag acc agc tcc aag cag gac tct tgg aac agt ctg gtc
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1035 ttg   1296
     1036 Ser Pro Gln Thr Ser Ser Lys Gln Asp Ser Trp Asn Ser Leu Val
W--> 1037 Leu
W--> 1038              420                 425                 430
E--> 1039 gcc gac agt cac ggg gac ata atc act gcg
     1040         1326
     1041 Ala Asp Ser His Gly Asp Ile Ile Thr Ala
W--> 1042          435                 440
     1043 <210> SEQ ID NO: 13
     1044 <211> LENGTH: 507
     1045 <212> TYPE: PRT
     1046 <213> ORGANISM: Homo sapiens
W--> 1047 <400> SEQUENCE: 13
     1048 Met Gly Arg Lys Lys Ile Gln Ile Thr Arg Ile Met Asp Glu Arg
E--> 1049 Asn
E--> 1050   1               5                  10                  15
     1051 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
E--> 1052 Ala
E--> 1053              20                  25                  30
     1054 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
E--> 1055 Phe
E--> 1056          35                  40                  45
     1057 Asn Ser Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
E--> 1058 Lys
E--> 1059      50                  55                  60
     1060 Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg
E--> 1061 Thr
E--> 1062  65                  70                  75
E--> 1063   80
     1064 Asn Ser Asp Ile Val Glu Ala Leu Asn Lys Lys Glu His Arg Gly
E--> 1065 Cys
E--> 1066                  85                  90                  95
     1067 Asp Ser Pro Asp Pro Asp Thr Ser Tyr Val Leu Thr Pro His Thr
E--> 1068 Glu
E--> 1069              100                 105                 110
     1070 Glu Lys Tyr Lys Lys Ile Asn Glu Glu Phe Asp Asn Met Met Arg
E--> 1071 Asn
E--> 1072          115                 120                 125
     1073 His Lys Ile Ala Pro Gly Leu Pro Pro Gln Asn Phe Ser Met Ser
E--> 1074 Val
E--> 1075      130                 135                 140
     1076 Thr Val Pro Val Thr Ser Pro Asn Ala Leu Ser Tyr Thr Asn Pro
E--> 1077 Gly
E--> 1078 145                 150                 155
E--> 1079  160
     1080 Ser Ser Leu Val Ser Pro Ser Leu Ala Ala Ser Ser Thr Leu Thr
E--> 1081 Asp
E--> 1082                  165                 170                 175
     1083 Ser Ser Met Leu Ser Pro Pro Gln Thr Thr Leu His Arg Asn Val
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1084 Ser
E--> 1085              180                 185                 190
     1086 Pro Gly Ala Pro Gln Arg Pro Pro Ser Thr Gly Asn Ala Gly Gly
E--> 1087 Met
E--> 1088         195                 200                 205
     1089 Leu Ser Thr Thr Asp Leu Thr Val Pro Asn Gly Ala Gly Ser Ser
E--> 1090 Pro
E--> 1091     210                 215                 220
     1092 Val Gly Asn Gly Phe Val Asn Ser Arg Ala Ser Pro Asn Leu Ile
E--> 1093 Gly
E--> 1094 225                 230                 235
E--> 1095  240
     1096 Ala Thr Gly Ala Asn Ser Leu Gly Lys Val Met Pro Thr Lys Ser
E--> 1097 Pro
E--> 1098                  245                 250                 255
     1099 Pro Pro Pro Gly Gly Gly Asn Leu Gly Met Asn Ser Arg Lys Pro
E--> 1100 Asp
E--> 1101              260                 265                 270
     1102 Leu Arg Val Val Ile Pro Pro Ser Ser Lys Gly Met Met Pro Pro
E--> 1103 Leu
E--> 1104         275                 280                 285
     1105 Ser Glu Glu Glu Glu Leu Glu Leu Asn Thr Gln Arg Ile Ser Ser
E--> 1106 Ser
E--> 1107     290                 295                 300
     1108 Gln Ala Thr Gln Pro Leu Ala Thr Pro Val Val Ser Val Thr Thr
E--> 1109 Pro
E--> 1110 305                 310                 315
E--> 1111  320
     1112 Ser Leu Pro Pro Gln Gly Leu Val Tyr Ser Ala Met Pro Thr Ala
E--> 1113 Tyr
E--> 1114                  325                 330                 335
     1115 Asn Thr Asp Tyr Ser Leu Thr Ser Ala Asp Leu Ser Ala Leu Gln
E--> 1116 Gly
E--> 1117              340                 345                 350
     1118 Phe Asn Ser Pro Gly Met Leu Ser Leu Gly Gln Val Ser Ala Trp
E--> 1119 Gln
E--> 1120         355                 360                 365
     1121 Gln His His Leu Gly Gln Ala Ala Leu Ser Ser Leu Val Ala Gly
E--> 1122 Gly
E--> 1123     370                 375                 380
     1124 Gln Leu Ser Gln Gly Ser Asn Leu Ser Ile Asn Thr Asn Gln Asn
E--> 1125 Ile
E--> 1126 385                 390                 395
E--> 1127  400
     1128 Ser Ile Lys Ser Glu Pro Ile Ser Pro Pro Arg Asp Arg Met Thr
E--> 1129 Pro
E--> 1130                  405                 410                 415
     1131 Ser Gly Phe Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro
E--> 1132 Pro
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1133              420                 425                 430
     1134 Pro Pro Pro Gln Pro Gln Pro Gln Pro Pro Gln Pro Gln Pro Arg
E--> 1135 Gln
E--> 1136         435                 440                 445
     1137 Glu Met Gly Arg Ser Pro Val Asp Ser Leu Ser Ser Ser Ser Ser
E--> 1138 Ser
E--> 1139     450                 455                 460
     1140 Tyr Asp Gly Ser Asp Arg Glu Asp Pro Arg Gly Asp Phe His Ser
E--> 1141 Pro
E--> 1142 465                 470                 475
E--> 1143  480
     1144 Ile Val Leu Gly Arg Pro Pro Asn Thr Glu Asp Arg Glu Ser Pro
E--> 1145 Ser
E--> 1146                 485                 490                 495
     1147 Val Lys Arg Met Arg Met Asp Ala Trp Val Thr
E--> 1148              500                 505
     1149 <210> SEQ ID NO: 14
     1150 <211> LENGTH: 1521
     1151 <212> TYPE: DNA
     1152 <213> ORGANISM: Homo sapiens
W--> 1153 <220> FEATURE:
     1154 <221> NAME/KEY: CDS
     1155 <223> OTHER INFORMATION: (1)..(1524)
W--> 1156 <400> SEQUENCE: 14
E--> 1157 atg ggg cgg aag aaa ata caa atc aca cgc ata atg gat gaa agg
     1158 aac   48
     1159 Met Gly Arg Lys Lys Ile Gln Ile Thr Arg Ile Met Asp Glu Arg
W--> 1160 Asn
W--> 1161   1               5                  10                  15
E--> 1162 cga cag gtc act ttt aca aag aga aag ttt gga tta atg aag aaa
     1163 gcc   96
     1164 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
W--> 1165 Ala
W--> 1166              20                  25                  30
E--> 1167 tat gaa ctt agt gtg ctc tgt gac tgt gaa ata gca ctc atc att
     1168 ttc   144
     1169 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
W--> 1170 Phe
W--> 1171          35                  40                  45
E--> 1172 aac agc tct aac aaa ctg ttt caa tat gct agc act gat atg gac
     1173 aaa   192
     1174 Asn Ser Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
W--> 1175 Lys
W--> 1176      50                  55                  60
E--> 1177 gtt ctt ctc aag tat aca gaa tat aat gaa cct cat gaa agc aga
     1178 acc   240
     1179 Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg
W--> 1180 Thr
W--> 1181  65                  70                  75
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1182   80
E--> 1183 aac tcg gat att gtt gag gct ctg aac aag aag gaa cac aga ggg
     1184 tgc   288
     1185 Asn Ser Asp Ile Val Glu Ala Leu Asn Lys Lys Glu His Arg Gly
W--> 1186 Cys
W--> 1187                  85                  90                  95
E--> 1188 gac agc cca gac cct gat act tca tat gtg cta act cca cat aca
     1189 gaa   336
     1190 Asp Ser Pro Asp Pro Asp Thr Ser Tyr Val Leu Thr Pro His Thr
W--> 1191 Glu
W--> 1192             100                 105                 110
E--> 1193 gaa aaa tat aaa aaa att aat gag gaa ttt gat aat atg atg cgg
     1194 aat   384
     1195 Glu Lys Tyr Lys Lys Ile Asn Glu Glu Phe Asp Asn Met Met Arg
W--> 1196 Asn
W--> 1197         115                 120                 125
E--> 1198 cat aaa atc gca cct ggt ctg cca cct cag aac ttt tca atg tct
     1199 gtc   432
     1200 His Lys Ile Ala Pro Gly Leu Pro Pro Gln Asn Phe Ser Met Ser
W--> 1201 Val
W--> 1202     130                 135                 140
E--> 1203 aca gtt cca gtg acc agc ccc aat gct ttg tcc tac act aac cca
     1204 ggg   480
     1205 Thr Val Pro Val Thr Ser Pro Asn Ala Leu Ser Tyr Thr Asn Pro
W--> 1206 Gly
W--> 1207 145                 150                 155
E--> 1208  160
E--> 1209 agt tca ctg gtg tcc cca tct ttg gca gcc agc tca acg tta aca
     1210 gat   528
     1211 Ser Ser Leu Val Ser Pro Ser Leu Ala Ala Ser Ser Thr Leu Thr
W--> 1212 Asp
W--> 1213                 165                 170                 175
E--> 1214 tca agc atg ctc tct cca cct caa acc aca tta cat aga aat gtg
     1215 tct   576
     1216 Ser Ser Met Leu Ser Pro Pro Gln Thr Thr Leu His Arg Asn Val
W--> 1217 Ser
W--> 1218             180                 185                 190
E--> 1219 cct gga gct cct cag aga cca cca agt act ggc aat gca ggt ggg
     1220 atg   624
     1221 Pro Gly Ala Pro Gln Arg Pro Pro Ser Thr Gly Asn Ala Gly Gly
W--> 1222 Met
W--> 1223         195                 200                 205
E--> 1224 ttg agc act aca gac ctc aca gtg cca aat gga gct gga agc agt
     1225 cca   672
     1226 Leu Ser Thr Thr Asp Leu Thr Val Pro Asn Gly Ala Gly Ser Ser
W--> 1227 Pro
W--> 1228     210                 215                 220
E--> 1229 gtg ggg aat gga ttt gta aac tca aga gct tct cca aat ttg att
     1230 gga   720
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1231 Val Gly Asn Gly Phe Val Asn Ser Arg Ala Ser Pro Asn Leu Ile
W--> 1232 Gly
W--> 1233 225                 230                 235
E--> 1234  240
E--> 1235 gct act ggt gca aat agc tta ggc aaa gtc atg cct aca aag tct
     1236 ccc   768
     1237 Ala Thr Gly Ala Asn Ser Leu Gly Lys Val Met Pro Thr Lys Ser
W--> 1238 Pro
W--> 1239                 245                 250                 255
E--> 1240 cct cca cca ggt ggt ggt aat ctt gga atg aac agt agg aaa cca
     1241 gat   816
     1242 Pro Pro Pro Gly Gly Gly Asn Leu Gly Met Asn Ser Arg Lys Pro
W--> 1243 Asp
W--> 1244             260                 265                 270
E--> 1245 ctt cga gtt gtc atc ccc cct tca agc aag ggc atg atg cct cca
     1246 cta   864
     1247 Leu Arg Val Val Ile Pro Pro Ser Ser Lys Gly Met Met Pro Pro
W--> 1248 Leu
W--> 1249         275                 280                 285
E--> 1250 tcg gag gaa gag gaa ttg gag ttg aac acc caa agg atc agt agt
     1251 tct   912
     1252 Ser Glu Glu Glu Glu Leu Glu Leu Asn Thr Gln Arg Ile Ser Ser
W--> 1253 Ser
W--> 1254     290                 295                 300
E--> 1255 caa gcc act caa cct ctt gct acc cca gtc gtg tct gtg aca acc
     1256 cca   960
     1257 Gln Ala Thr Gln Pro Leu Ala Thr Pro Val Val Ser Val Thr Thr
W--> 1258 Pro
W--> 1259 305                 310                 315
E--> 1260  320
E--> 1261 agc ttg cct ccg caa gga ctt gtg tac tca gca atg ccg act gcc
     1262 tac   1008
     1263 Ser Leu Pro Pro Gln Gly Leu Val Tyr Ser Ala Met Pro Thr Ala
W--> 1264 Tyr
W--> 1265                 325                 330                 335
E--> 1266 aac act gat tat tca ctg acc agc gct gac ctg tca gcc ctt caa
     1267 ggc   1056
     1268 Asn Thr Asp Tyr Ser Leu Thr Ser Ala Asp Leu Ser Ala Leu Gln
W--> 1269 Gly
W--> 1270             340                 345                 350
E--> 1271 ttc aac tcg cca gga atg ctg tcg ctg gga cag gtg tcg gcc tgg
     1272 cag   1104
     1273 Phe Asn Ser Pro Gly Met Leu Ser Leu Gly Gln Val Ser Ala Trp
W--> 1274 Gln
W--> 1275         355                 360                 365
E--> 1276 cag cac cac cta gga caa gca gcc ctc agc tct ctt gtt gct gga
     1277 ggg   1152
     1278 Gln His His Leu Gly Gln Ala Ala Leu Ser Ser Leu Val Ala Gly
W--> 1279 Gly
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 1280     370                 375                 380
E--> 1281 cag tta tct cag ggt tcc aat tta tcc att aat acc aac caa aac
     1282 atc   1200
     1283 Gln Leu Ser Gln Gly Ser Asn Leu Ser Ile Asn Thr Asn Gln Asn
W--> 1284 Ile
W--> 1285 385                 390                 395
E--> 1286  400
E--> 1287 agc atc aag tcc gaa ccg att tca cct cct cgg gat cgt atg acc
     1288 cca   1248
     1289 Ser Ile Lys Ser Glu Pro Ile Ser Pro Pro Arg Asp Arg Met Thr
W--> 1290 Pro
W--> 1291                 405                 410                 415
E--> 1292 tcg ggc ttc cag cag cag cag cag cag cag cag cag cag cag ccg
     1293 ccg   1296
     1294 Ser Gly Phe Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro
W--> 1295 Pro
W--> 1296             420                 425                 430
E--> 1297 cca cca ccg cag ccc cag cca caa ccc ccg cag ccc cag ccc cga
     1298 cag   1344
     1299 Pro Pro Pro Gln Pro Gln Pro Gln Pro Pro Gln Pro Gln Pro Arg
W--> 1300 Gln
W--> 1301         435                 440                 445
E--> 1302 gaa atg ggg cgc tcc cct gtg gac agt ctg agc agc tct agt agc
     1303 tcc   1392
     1304 Glu Met Gly Arg Ser Pro Val Asp Ser Leu Ser Ser Ser Ser Ser
W--> 1305 Ser
W--> 1306     450                 455                 460
E--> 1307 tat gat ggc agt gat cgg gag gat cca cgg ggc gac ttc cat tct
     1308 cca   1440
     1309 Tyr Asp Gly Ser Asp Arg Glu Asp Pro Arg Gly Asp Phe His Ser
W--> 1310 Pro
W--> 1311 465                 470                 475
E--> 1312  480
E--> 1313 att gtg ctt ggc cga ccc cca aac act gag gac aga gaa agc cct
     1314 tct   1488
     1315 Ile Val Leu Gly Arg Pro Pro Asn Thr Glu Asp Arg Glu Ser Pro
W--> 1316 Ser
W--> 1317                 485                 490                 495
E--> 1318 gta aag cga atg agg atg gac gcg tgg gtg acc
     1319        1521
     1320 Val Lys Arg Met Arg Met Asp Ala Trp Val Thr
W--> 1321             500                 505
     1322 <210> SEQ ID NO: 15
     1323 <211> LENGTH: 365
     1324 <212> TYPE: PRT
     1325 <213> ORGANISM: Homo sapiens
W--> 1326 <400> SEQUENCE: 15
     1327 Met Gly Arg Lys Lys Ile Gln Ile Ser Arg Ile Leu Asp Gln Arg
E--> 1328 Asn
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1329   1               5                  10                  15
     1330 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
E--> 1331 Ala
E--> 1332              20                  25                  30
     1333 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
E--> 1334 Phe
E--> 1335          35                  40                  45
     1336 Asn Ser Ala Asn Arg Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
E--> 1337 Arg
E--> 1338      50                  55                  60
     1339 Val Leu Leu Lys Tyr Thr Glu Tyr Ser Glu Pro His Glu Ser Arg
E--> 1340 Thr
E--> 1341  65                  70                  75
E--> 1342   80
     1343 Asn Thr Asp Ile Leu Glu Thr Leu Lys Arg Arg Gly Ile Gly Leu
E--> 1344 Asp
E--> 1345                  85                  90                  95
     1346 Gly Pro Glu Leu Glu Pro Asp Glu Gly Pro Glu Glu Pro Gly Glu
E--> 1347 Lys
E--> 1348              100                 105                 110
     1349 Phe Arg Arg Leu Ala Gly Glu Gly Gly Asp Pro Ala Leu Pro Arg
E--> 1350 Pro
E--> 1351          115                 120                 125
     1352 Arg Leu Tyr Pro Ala Ala Pro Ala Met Pro Ser Pro Asp Val Val
E--> 1353 Tyr
E--> 1354      130                 135                 140
     1355 Gly Ala Leu Pro Pro Pro Gly Cys Asp Pro Ser Gly Leu Gly Glu
E--> 1356 Ala
E--> 1357 145                 150                 155
E--> 1358  160
     1359 Leu Pro Ala Gln Ser Arg Pro Ser Pro Phe Arg Pro Ala Ala Pro
E--> 1360 Lys
E--> 1361                  165                 170                 175
     1362 Ala Gly Pro Pro Gly Leu Val His Pro Leu Phe Ser Pro Ser His
E--> 1363 Leu
E--> 1364              180                 185                 190
     1365 Thr Ser Lys Thr Pro Pro Pro Leu Tyr Leu Pro Thr Glu Gly Arg
E--> 1366 Arg
E--> 1367          195                 200                 205
     1368 Ser Asp Leu Pro Gly Gly Leu Ala Gly Pro Arg Gly Gly Leu Asn
E--> 1369 Thr
E--> 1370      210                 215                 220
     1371 Ser Arg Ser Leu Tyr Ser Gly Leu Gln Asn Pro Cys Ser Thr Ala
E--> 1372 Thr
E--> 1373 225                 230                 235
E--> 1374  240
     1375 Pro Gly Pro Pro Leu Gly Ser Phe Pro Phe Leu Pro Gly Gly Pro
E--> 1376 Pro
E--> 1377                  245                 250                 255
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1378 Val Gly Ala Glu Ala Trp Ala Arg Arg Val Pro Gln Pro Ala Ala
E--> 1379 Pro
E--> 1380              260                 265                 270
     1381 Pro Arg Arg Pro Pro Gln Ser Ala Ser Ser Leu Ser Ala Ser Leu
E--> 1382 Arg
E--> 1383         275                 280                 285
     1384 Pro Pro Gly Ala Pro Ala Thr Phe Leu Arg Pro Ser Pro Ile Pro
E--> 1385 Cys
E--> 1386     290                 295                 300
     1387 Ser Ser Pro Gly Pro Trp Gln Ser Leu Cys Gly Leu Gly Pro Pro
E--> 1388 Cys
E--> 1389 305                 310                 315
E--> 1390  320
     1391 Ala Gly Cys Pro Trp Pro Thr Ala Gly Pro Gly Arg Arg Ser Pro
E--> 1392 Gly
E--> 1393                 325                 330                 335
     1394 Gly Thr Ser Pro Glu Arg Ser Pro Gly Thr Ala Arg Ala Arg Gly
E--> 1395 Asp
E--> 1396              340                 345                 350
     1397 Pro Thr Ser Leu Gln Ala Ser Ser Glu Lys Thr Gln Gln
E--> 1398         355                 360
     1399 <210> SEQ ID NO: 16
     1400 <211> LENGTH: 1095
     1401 <212> TYPE: DNA
     1402 <213> ORGANISM: Homo sapiens
W--> 1403 <220> FEATURE:
     1404 <221> NAME/KEY: CDS
     1405 <223> OTHER INFORMATION: (1)..(1098)
W--> 1406 <400> SEQUENCE: 16
E--> 1407 atg ggg agg aaa aaa atc cag atc tcc cgc atc ctg gac caa agg
     1408 aat   48
     1409 Met Gly Arg Lys Lys Ile Gln Ile Ser Arg Ile Leu Asp Gln Arg
W--> 1410 Asn
W--> 1411   1               5                  10                  15
E--> 1412 cgg cag gtg acg ttc acc aag cgg aag ttc ggg ctg atg aag aag
     1413 gcc   96
     1414 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
W--> 1415 Ala
W--> 1416              20                  25                  30
E--> 1417 tat gag ctg agc gtg ctc tgt gac tgt gag ata gcc ctc atc atc
     1418 ttc   144
     1419 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
W--> 1420 Phe
W--> 1421          35                  40                  45
E--> 1422 aac agc gcc aac cgc ctc ttc cag tat gcc agc acg gac atg gac
     1423 cgt   192
     1424 Asn Ser Ala Asn Arg Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
W--> 1425 Arg
W--> 1426      50                  55                  60
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1427 gtg ctg ctg aag tac aca gag tac agc gag ccc cac gag agc cgc
     1428 acc   240
     1429 Val Leu Leu Lys Tyr Thr Glu Tyr Ser Glu Pro His Glu Ser Arg
W--> 1430 Thr
W--> 1431  65                  70                  75
E--> 1432   80
E--> 1433 aac act gac atc ctc gag acg ctg aag cgg agg ggc att ggc ctc
     1434 gat   288
     1435 Asn Thr Asp Ile Leu Glu Thr Leu Lys Arg Arg Gly Ile Gly Leu
W--> 1436 Asp
W--> 1437                  85                  90                  95
E--> 1438 ggg cca gag ctg gag ccg gat gaa ggg cct gag gag cca gga gag
     1439 aag   336
     1440 Gly Pro Glu Leu Glu Pro Asp Glu Gly Pro Glu Glu Pro Gly Glu
W--> 1441 Lys
W--> 1442             100                 105                 110
E--> 1443 ttt cgg agg ctg gca ggc gaa ggg ggt gat ccg gcc ttg ccc cga
     1444 ccc   384
     1445 Phe Arg Arg Leu Ala Gly Glu Gly Gly Asp Pro Ala Leu Pro Arg
W--> 1446 Pro
W--> 1447         115                 120                 125
E--> 1448 cgg ctg tat cct gca gct cct gct atg ccc agc cca gat gtg gta
     1449 tac   432
     1450 Arg Leu Tyr Pro Ala Ala Pro Ala Met Pro Ser Pro Asp Val Val
W--> 1451 Tyr
W--> 1452     130                 135                 140
E--> 1453 ggg gcc tta ccg cca cca ggc tgt gac ccc agt ggg ctt ggg gaa
     1454 gca   480
     1455 Gly Ala Leu Pro Pro Pro Gly Cys Asp Pro Ser Gly Leu Gly Glu
W--> 1456 Ala
W--> 1457 145                 150                 155
E--> 1458  160
E--> 1459 ctg ccc gcc cag agc cgc cca tct ccc ttc cga cca gca gcc ccc
     1460 aaa   528
     1461 Leu Pro Ala Gln Ser Arg Pro Ser Pro Phe Arg Pro Ala Ala Pro
W--> 1462 Lys
W--> 1463                 165                 170                 175
E--> 1464 gcc ggg ccc cca ggc ctg gtg cac cct ctc ttc tca cca agc cac
     1465 ctc   576
     1466 Ala Gly Pro Pro Gly Leu Val His Pro Leu Phe Ser Pro Ser His
W--> 1467 Leu
W--> 1468             180                 185                 190
E--> 1469 acc agc aag aca cca ccc cca ctg tac ctg ccg acg gaa ggg cgg
     1470 agg   624
     1471 Thr Ser Lys Thr Pro Pro Pro Leu Tyr Leu Pro Thr Glu Gly Arg
W--> 1472 Arg
W--> 1473         195                 200                 205
E--> 1474 tca gac ctg cct ggt ggc ctg gct ggg ccc cga ggg gga cta aac
     1475 acc   672
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1476 Ser Asp Leu Pro Gly Gly Leu Ala Gly Pro Arg Gly Gly Leu Asn
W--> 1477 Thr
W--> 1478     210                 215                 220
E--> 1479 tcc aga agc ctc tac agt ggc ctg cag aac ccc tgc tcc act gca
     1480 act   720
     1481 Ser Arg Ser Leu Tyr Ser Gly Leu Gln Asn Pro Cys Ser Thr Ala
W--> 1482 Thr
W--> 1483 225                 230                 235
E--> 1484  240
E--> 1485 ccc gga ccc cca ctg ggg agc ttc ccc ttc ctc ccc gga ggc ccc
     1486 cca   768
     1487 Pro Gly Pro Pro Leu Gly Ser Phe Pro Phe Leu Pro Gly Gly Pro
W--> 1488 Pro
W--> 1489                 245                 250                 255
E--> 1490 gtg ggg gcc gaa gcc tgg gcg agg agg gtc ccc caa ccc gcg gcg
     1491 cct   816
     1492 Val Gly Ala Glu Ala Trp Ala Arg Arg Val Pro Gln Pro Ala Ala
W--> 1493 Pro
W--> 1494             260                 265                 270
E--> 1495 ccc cgc cga ccc ccc cag tca gca tca agt ctg agc gcc tct ctc
     1496 cgg   864
     1497 Pro Arg Arg Pro Pro Gln Ser Ala Ser Ser Leu Ser Ala Ser Leu
W--> 1498 Arg
W--> 1499         275                 280                 285
E--> 1500 ccc ccg ggg gcc ccg gcg act ttc cta aga cct tcc cct atc cct
     1501 tgc   912
     1502 Pro Pro Gly Ala Pro Ala Thr Phe Leu Arg Pro Ser Pro Ile Pro
W--> 1503 Cys
W--> 1504     290                 295                 300
E--> 1505 tcc tcg ccc ggt ccc tgg cag agc ctc tgc ggc ctg ggc ccg ccc
     1506 tgc   960
     1507 Ser Ser Pro Gly Pro Trp Gln Ser Leu Cys Gly Leu Gly Pro Pro
W--> 1508 Cys
W--> 1509 305                 310                 315
E--> 1510  320
E--> 1511 gcc ggc tgc cct tgg ccg acg gct ggc ccc ggt agg aga tca ccc
     1512 ggt   1008
     1513 Ala Gly Cys Pro Trp Pro Thr Ala Gly Pro Gly Arg Arg Ser Pro
W--> 1514 Gly
W--> 1515                 325                 330                 335
E--> 1516 ggc acc agc cca gag cgc tcg cca ggt acg gcg agg gca cgt ggg
     1517 gac   1056
     1518 Gly Thr Ser Pro Glu Arg Ser Pro Gly Thr Ala Arg Ala Arg Gly
W--> 1519 Asp
W--> 1520             340                 345                 350
E--> 1521 ccc acc tcc ctc cag gcc tct tca gag aag acc caa cag
     1522         1095
     1523 Pro Thr Ser Leu Gln Ala Ser Ser Glu Lys Thr Gln Gln
W--> 1524         355                 360                 365
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

1525 <210> SEQ ID NO: 17
1526 <211> LENGTH: 465
1527 <212> TYPE: PRT
1528 <213> ORGANISM: Homo sapiens
W--> 1529 <400> SEQUENCE: 17
1530 Met Gly Arg Lys Lys Ile Gln Ile Thr Arg Ile Met Asp Glu Arg
E--> 1531 Asn
E--> 1532 1 5 10 15
1533 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
E--> 1534 Ala
E--> 1535 20 25 30
1536 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
E--> 1537 Phe
E--> 1538 35 40 45
1539 Asn Ser Thr Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
E--> 1540 Lys
E--> 1541 50 55 60
1542 Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg
E--> 1543 Thr
E--> 1544 65 70 75
E--> 1545 80
1546 Asn Ser Asp Ile Val Glu Thr Leu Arg Lys Lys Gly Leu Asn Gly
E--> 1547 Cys
E--> 1548 85 90 95
1549 Asp Ser Pro Asp Pro Asp Ala Asp Asp Ser Val Gly His Ser Pro
E--> 1550 Glu
E--> 1551 100 105 110
1552 Ser Glu Asp Lys Tyr Arg Lys Ile Asn Glu Asp Ile Asp Leu Met
E--> 1553 Ile
E--> 1554 115 120 125
1555 Ser Arg Gln Arg Leu Cys Ala Val Pro Pro Pro Asn Phe Glu Met
E--> 1556 Pro
E--> 1557 130 135 140
1558 Val Ser Ile Pro Val Ser Ser His Asn Ser Leu Val Tyr Ser Asn
E--> 1559 Pro
E--> 1560 145 150 155
E--> 1561 160
1562 Val Ser Ser Leu Gly Asn Pro Asn Leu Leu Pro Leu Ala His Pro
E--> 1563 Ser
E--> 1564 165 170 175
1565 Leu Gln Arg Asn Ser Met Ser Pro Gly Val Thr His Arg Pro Pro
E--> 1566 Ser
E--> 1567 180 185 190
1568 Ala Gly Asn Thr Gly Gly Leu Met Gly Gly Asp Leu Thr Ser Gly
E--> 1569 Ala
E--> 1570 195 200 205
1571 Gly Thr Ser Ala Gly Asn Gly Tyr Gly Asn Pro Arg Asn Ser Pro
E--> 1572 Gly
E--> 1573 210 215 220

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1574 Leu Leu Val Ser Pro Gly Asn Leu Asn Lys Asn Met Gln Ala Lys
E--> 1575 Ser
E--> 1576 225                 230                 235
E--> 1577  240
     1578 Pro Pro Pro Met Asn Leu Gly Met Asn Asn Arg Lys Pro Asp Leu
E--> 1579 Arg
E--> 1580                 245                 250                 255
     1581 Val Leu Ile Pro Pro Gly Ser Lys Asn Thr Met Pro Ser Val Asn
E--> 1582 Gln
E--> 1583             260                 265                 270
     1584 Arg Ile Asn Asn Ser Gln Ser Ala Gln Ser Leu Ala Thr Pro Val
E--> 1585 Val
E--> 1586         275                 280                 285
     1587 Ser Val Ala Thr Pro Thr Leu Pro Gly Gln Gly Met Gly Gly Tyr
E--> 1588 Pro
E--> 1589     290                 295                 300
     1590 Ser Ala Ile Ser Thr Thr Tyr Gly Thr Glu Tyr Ser Leu Ser Ser
E--> 1591 Ala
E--> 1592 305                 310                 315
E--> 1593  320
     1594 Asp Leu Ser Ser Leu Ser Gly Phe Asn Thr Ala Ser Ala Leu His
E--> 1595 Leu
E--> 1596                 325                 330                 335
     1597 Gly Ser Val Thr Gly Trp Gln Gln Gln His Leu His Asn Met Pro
E--> 1598 Pro
E--> 1599             340                 345                 350
     1600 Ser Ala Leu Ser Gln Leu Gly Ala Cys Thr Ser Thr His Leu Ser
E--> 1601 Gln
E--> 1602         355                 360                 365
     1603 Ser Ser Asn Leu Ser Leu Pro Ser Thr Gln Ser Leu Asn Ile Lys
E--> 1604 Ser
E--> 1605     370                 375                 380
     1606 Glu Pro Val Ser Pro Pro Arg Asp Arg Thr Thr Thr Pro Ser Arg
E--> 1607 Tyr
E--> 1608 385                 390                 395
E--> 1609  400
     1610 Pro Gln His Thr Arg His Glu Ala Gly Arg Ser Pro Val Asp Ser
E--> 1611 Leu
E--> 1612                 405                 410                 415
     1613 Ser Ser Cys Ser Ser Ser Tyr Asp Gly Ser Asp Arg Glu Asp His
E--> 1614 Arg
E--> 1615             420                 425                 430
     1616 Asn Glu Phe His Ser Pro Ile Gly Leu Thr Arg Pro Ser Pro Asp
E--> 1617 Glu
E--> 1618         435                 440                 445
     1619 Arg Glu Ser Pro Ser Val Lys Arg Met Arg Leu Ser Glu Gly Trp
E--> 1620 Ala
E--> 1621     450                 455                 460
     1622 Thr
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

1623 <210> SEQ ID NO: 18
1624 <211> LENGTH: 1395
1625 <212> TYPE: DNA
1626 <213> ORGANISM: Homo sapiens
W--> 1627 <220> FEATURE:
1628 <221> NAME/KEY: CDS
1629 <223> OTHER INFORMATION: (1)..(1398)
W--> 1630 <400> SEQUENCE: 18
E--> 1631 atg ggg aga aaa aag att cag att acg agg att atg gat gaa cgt
1632 aac 48
1633 Met Gly Arg Lys Lys Ile Gln Ile Thr Arg Ile Met Asp Glu Arg
W--> 1634 Asn
W--> 1635 1 5 10 15
E--> 1636 aga cag gtg aca ttt aca aag agg aaa ttt ggg ttg atg aag aag
1637 gct 96
1638 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
W--> 1639 Ala
W--> 1640 20 25 30
E--> 1641 tat gag ctg agc gtg ctg tgt gac tgt gag att gcg ctg atc atc
1642 ttc 144
1643 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
W--> 1644 Phe
W--> 1645 35 40 45
E--> 1646 aac agc acc aac aag ctg ttc cag tat gcc agc acc gac atg gac
1647 aaa 192
1648 Asn Ser Thr Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
W--> 1649 Lys
W--> 1650 50 55 60
E--> 1651 gtg ctt ctc aag tac acg gag tac aac gag ccg cat gag agc cgg
1652 aca 240
1653 Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg
W--> 1654 Thr
W--> 1655 65 70 75
E--> 1656 80
E--> 1657 aac tca gac atc gtg gag acg ttg aga aag aag ggc ctt aat ggc
1658 tgt 288
1659 Asn Ser Asp Ile Val Glu Thr Leu Arg Lys Lys Gly Leu Asn Gly
W--> 1660 Cys
W--> 1661 85 90 95
E--> 1662 gac agc cca gac ccc gat gcg gac gat tcc gta ggt cac agc cct
1663 gag 336
1664 Asp Ser Pro Asp Pro Asp Ala Asp Asp Ser Val Gly His Ser Pro
W--> 1665 Glu
W--> 1666 100 105 110
E--> 1667 tct gag gac aag tac agg aaa att aac gaa gat att gat cta atg
1668 atc 384
1669 Ser Glu Asp Lys Tyr Arg Lys Ile Asn Glu Asp Ile Asp Leu Met
W--> 1670 Ile
W--> 1671 115 120 125

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 1672 agc agg caa aga ttg tgt gct gtt cca cct ccc aac ttc gag atg
     1673 cca   432
     1674 Ser Arg Gln Arg Leu Cys Ala Val Pro Pro Pro Asn Phe Glu Met
W--> 1675 Pro
W--> 1676     130                 135                 140
E--> 1677 gtc tcc atc cca gtg tcc agc cac aac agt ttg gtg tac agc aac
     1678 cct   480
     1679 Val Ser Ile Pro Val Ser Ser His Asn Ser Leu Val Tyr Ser Asn
W--> 1680 Pro
W--> 1681 145                 150                 155
E--> 1682  160
E--> 1683 gtc agc tca ctg gga aac ccc aac cta ttg cca ctg gct cac cct
     1684 tct   528
     1685 Val Ser Ser Leu Gly Asn Pro Asn Leu Leu Pro Leu Ala His Pro
W--> 1686 Ser
W--> 1687                 165                 170                 175
E--> 1688 ctg cag agg aat agt atg tct cct ggt gta aca cat cga cct cca
     1689 agt   576
     1690 Leu Gln Arg Asn Ser Met Ser Pro Gly Val Thr His Arg Pro Pro
W--> 1691 Ser
W--> 1692             180                 185                 190
E--> 1693 gca ggt aac aca ggt ggt ctg atg ggt gga gac ctc acg tct ggt
     1694 gca   624
     1695 Ala Gly Asn Thr Gly Gly Leu Met Gly Gly Asp Leu Thr Ser Gly
W--> 1696 Ala
W--> 1697         195                 200                 205
E--> 1698 ggc acc agt gca ggg aac ggg tat ggc aat ccc cga aac tca cca
     1699 ggt   672
     1700 Gly Thr Ser Ala Gly Asn Gly Tyr Gly Asn Pro Arg Asn Ser Pro
W--> 1701 Gly
W--> 1702     210                 215                 220
E--> 1703 ctg ctg gtc tca cct ggt aac ttg aac aag aat atg caa gca aaa
     1704 tct   720
     1705 Leu Leu Val Ser Pro Gly Asn Leu Asn Lys Asn Met Gln Ala Lys
W--> 1706 Ser
W--> 1707 225                 230                 235
E--> 1708  240
E--> 1709 cct ccc cca atg aat tta gga atg aat aac cgt aaa cca gat ctc
     1710 cga   768
     1711 Pro Pro Pro Met Asn Leu Gly Met Asn Asn Arg Lys Pro Asp Leu
W--> 1712 Arg
W--> 1713                 245                 250                 255
E--> 1714 gtt ctt att cca cca ggc agc aag aat acg atg cca tca gtg aat
     1715 caa   816
     1716 Val Leu Ile Pro Pro Gly Ser Lys Asn Thr Met Pro Ser Val Asn
W--> 1717 Gln
W--> 1718             260                 265                 270
E--> 1719 agg ata aat aac tcc cag tcg gct cag tca ttg gct acc cca gtg
     1720 gtt   864
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1721 Arg Ile Asn Asn Ser Gln Ser Ala Gln Ser Leu Ala Thr Pro Val
W--> 1722 Val
W--> 1723         275                 280                 285
E--> 1724 tcc gta gca act cct act tta cca gga caa gga atg gga gga tat
     1725 cca   912
     1726 Ser Val Ala Thr Pro Thr Leu Pro Gly Gln Gly Met Gly Gly Tyr
W--> 1727 Pro
W--> 1728     290                 295                 300
E--> 1729 tca gcc att tca aca aca tat ggt acc gag tac tct ctg agt agt
     1730 gca   960
     1731 Ser Ala Ile Ser Thr Thr Tyr Gly Thr Glu Tyr Ser Leu Ser Ser
W--> 1732 Ala
W--> 1733 305                 310                 315
E--> 1734  320
E--> 1735 gac ctg tca tct ctg tct ggg ttt aac acc gcc agc gct ctt cac
     1736 ctt   1008
     1737 Asp Leu Ser Ser Leu Ser Gly Phe Asn Thr Ala Ser Ala Leu His
W--> 1738 Leu
W--> 1739                 325                 330                 335
E--> 1740 ggt tca gta act ggc tgg caa cag caa cac cta cat aac atg cca
     1741 cca   1056
     1742 Gly Ser Val Thr Gly Trp Gln Gln Gln His Leu His Asn Met Pro
W--> 1743 Pro
W--> 1744             340                 345                 350
E--> 1745 tct gcc ctc agt cag ttg gga gct tgc act agc act cat tta tct
     1746 cag   1104
     1747 Ser Ala Leu Ser Gln Leu Gly Ala Cys Thr Ser Thr His Leu Ser
W--> 1748 Gln
W--> 1749         355                 360                 365
E--> 1750 agt tca aat ctc tcc ctg cct tct act caa agc ctc aac atc aag
     1751 tca   1152
     1752 Ser Ser Asn Leu Ser Leu Pro Ser Thr Gln Ser Leu Asn Ile Lys
W--> 1753 Ser
W--> 1754     370                 375                 380
E--> 1755 gaa cct gtt tct cct cct aga gac cgt acc acc acc cct tcg aga
     1756 tac   1200
     1757 Glu Pro Val Ser Pro Pro Arg Asp Arg Thr Thr Thr Pro Ser Arg
W--> 1758 Tyr
W--> 1759 385                 390                 395
E--> 1760  400
E--> 1761 cca caa cac acg cgc cac gag gcg ggg aga tct cct gtt gac agc
     1762 ttg   1248
     1763 Pro Gln His Thr Arg His Glu Ala Gly Arg Ser Pro Val Asp Ser
W--> 1764 Leu
W--> 1765                 405                 410                 415
E--> 1766 agc agc tgt agc agt tcg tac gac ggg agc gac cga gag gat cac
     1767 cgg   1296
     1768 Ser Ser Cys Ser Ser Ser Tyr Asp Gly Ser Asp Arg Glu Asp His
W--> 1769 Arg
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 1770              420                 425                 430
E--> 1771 aac gaa ttc cac tcc ccc att gga ctc acc aga cct tcg ccg gac
     1772 gaa   1344
     1773 Asn Glu Phe His Ser Pro Ile Gly Leu Thr Arg Pro Ser Pro Asp
W--> 1774 Glu
W--> 1775         435                 440                 445
E--> 1776 agg gaa agt ccc tca gtc aag cgc atg cga ctt tct gaa gga tgg
     1777 gca   1392
     1778 Arg Glu Ser Pro Ser Val Lys Arg Met Arg Leu Ser Glu Gly Trp
W--> 1779 Ala
W--> 1780     450                 455                 460
E--> 1781 aca
     1782        1395
     1783 Thr
W--> 1784 465
     1785 <210> SEQ ID NO: 19
     1786 <211> LENGTH: 521
     1787 <212> TYPE: PRT
     1788 <213> ORGANISM: Homo sapiens
W--> 1789 <400> SEQUENCE: 19
     1790 Met Gly Arg Lys Lys Ile Gln Ile Gln Arg Ile Thr Asp Glu Arg
E--> 1791 Asn
E--> 1792   1               5                  10                  15
     1793 Arg Gln Val Thr Phe Thr Lys Arg Lys Phe Gly Leu Met Lys Lys
E--> 1794 Ala
E--> 1795              20                  25                  30
     1796 Tyr Glu Leu Ser Val Leu Cys Asp Cys Glu Ile Ala Leu Ile Ile
E--> 1797 Phe
E--> 1798          35                  40                  45
     1799 Asn His Ser Asn Lys Leu Phe Gln Tyr Ala Ser Thr Asp Met Asp
E--> 1800 Lys
E--> 1801      50                  55                  60
     1802 Val Leu Leu Lys Tyr Thr Glu Tyr Asn Glu Pro His Glu Ser Arg
E--> 1803 Thr
E--> 1804  65                  70                  75
E--> 1805   80
     1806 Asn Ala Asp Ile Ile Glu Thr Leu Arg Lys Lys Gly Phe Asn Gly
E--> 1807 Cys
E--> 1808                  85                  90                  95
     1809 Asp Ser Pro Glu Pro Asp Gly Glu Asp Ser Leu Glu Gln Ser Pro
E--> 1810 Leu
E--> 1811             100                 105                 110
     1812 Leu Glu Asp Lys Tyr Arg Arg Ala Ser Glu Glu Leu Asp Gly Leu
E--> 1813 Phe
E--> 1814         115                 120                 125
     1815 Arg Arg Tyr Gly Ser Thr Val Pro Ala Pro Asn Phe Ala Met Pro
E--> 1816 Val
E--> 1817     130                 135                 140
     1818 Thr Val Pro Val Ser Asn Gln Ser Ser Leu Gln Phe Ser Asn Pro
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     1966 Pro Gly Leu Pro Gln Arg Pro Ala Ser Ala Gly Ala Met Leu Gly
W--> 1967 Gly
W--> 1968         195                 200                 205
E--> 1969 gac ctg aac agt gct aac gga gcc tgc ccc agc cct gtt ggg aat
     1970 ggc   672
     1971 Asp Leu Asn Ser Ala Asn Gly Ala Cys Pro Ser Pro Val Gly Asn
W--> 1972 Gly
W--> 1973     210                 215                 220
E--> 1974 tac gtc agt gct cgg gct tcc cct ggc ctc ctc cct gtg gcc aat
     1975 ggc   720
     1976 Tyr Val Ser Ala Arg Ala Ser Pro Gly Leu Leu Pro Val Ala Asn
W--> 1977 Gly
W--> 1978 225                 230                 235
E--> 1979  240
E--> 1980 aac agc cta aac aag gtc atc cct gcc aag tct ccg ccc cca cct
     1981 acc   768
     1982 Asn Ser Leu Asn Lys Val Ile Pro Ala Lys Ser Pro Pro Pro Pro
W--> 1983 Thr
W--> 1984                 245                 250                 255
E--> 1985 cac agc acc cag ctt gga gcc ccc agc cgc aag ccc gac ctg cga
     1986 gtc   816
     1987 His Ser Thr Gln Leu Gly Ala Pro Ser Arg Lys Pro Asp Leu Arg
W--> 1988 Val
W--> 1989             260                 265                 270
E--> 1990 atc act tcc cag gca gga aag ggg tta atg cat cac ttg act gag
     1991 gac   864
     1992 Ile Thr Ser Gln Ala Gly Lys Gly Leu Met His His Leu Thr Glu
W--> 1993 Asp
W--> 1994         275                 280                 285
E--> 1995 cat tta gat ctg aac aat gcc cag cgc ctt ggg gtc tcc cag tct
     1996 act   912
     1997 His Leu Asp Leu Asn Asn Ala Gln Arg Leu Gly Val Ser Gln Ser
W--> 1998 Thr
W--> 1999     290                 295                 300
E--> 2000 cat tcg ctc acc acc cca gtg gtt tct gtg gca acg ccg agt tta
     2001 ctc   960
     2002 His Ser Leu Thr Thr Pro Val Val Ser Val Ala Thr Pro Ser Leu
W--> 2003 Leu
W--> 2004 305                 310                 315
E--> 2005  320
E--> 2006 agc cag ggc ctc ccc ttc tct tcc atg ccc act gcc tac aac aca
     2007 gat   1008
     2008 Ser Gln Gly Leu Pro Phe Ser Ser Met Pro Thr Ala Tyr Asn Thr
W--> 2009 Asp
W--> 2010                 325                 330                 335
E--> 2011 tac cag ttg acc agt gca gag ctc tcc tcc tta cca gcc ttt agt
     2012 tca   1056
     2013 Tyr Gln Leu Thr Ser Ala Glu Leu Ser Ser Leu Pro Ala Phe Ser
W--> 2014 Ser
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 2015             340                 345                 350
E--> 2016 cct ggg ggg ctg tcg cta ggc aat gtc act gcc tgg caa cag cca
     2017 cag   1104
     2018 Pro Gly Gly Leu Ser Leu Gly Asn Val Thr Ala Trp Gln Gln Pro
W--> 2019 Gln
W--> 2020         355                 360                 365
E--> 2021 cag ccc cag cag ccg cag cag cca cag cct cca cag cag cag cca
     2022 ccg   1152
     2023 Gln Pro Gln Gln Pro Gln Gln Pro Gln Pro Pro Gln Gln Gln Pro
W--> 2024 Pro
W--> 2025     370                 375                 380
E--> 2026 cag cca cag cag cca cag cca cag cag cct cag cag ccg caa cag
     2027 cca   1200
     2028 Gln Pro Gln Gln Pro Gln Pro Gln Gln Pro Gln Gln Pro Gln Gln
W--> 2029 Pro
W--> 2030 385                 390                 395
E--> 2031  400
E--> 2032 cct cag caa cag tcc cac ctg gtc cct gta tct ctc agc aac ctc
     2033 atc   1248
     2034 Pro Gln Gln Gln Ser His Leu Val Pro Val Ser Leu Ser Asn Leu
W--> 2035 Ile
W--> 2036                 405                 410                 415
E--> 2037 ccg ggc agc ccc ctg ccc cac gtg ggt gct gcc ctc aca gtc acc
     2038 acc   1296
     2039 Pro Gly Ser Pro Leu Pro His Val Gly Ala Ala Leu Thr Val Thr
W--> 2040 Thr
W--> 2041             420                 425                 430
E--> 2042 cac ccc cac atc agc atc aag tca gaa ccg gtg tcc cca agc cgt
     2043 gag   1344
     2044 His Pro His Ile Ser Ile Lys Ser Glu Pro Val Ser Pro Ser Arg
W--> 2045 Glu
W--> 2046         435                 440                 445
E--> 2047 cgc agc cct gcg cct ccc cct cca gct gtg ttc cca gct gcc cgc
     2048 cct   1392
     2049 Arg Ser Pro Ala Pro Pro Pro Pro Ala Val Phe Pro Ala Ala Arg
W--> 2050 Pro
W--> 2051     450                 455                 460
E--> 2052 gag cct ggc gat ggt ctc agc agc cca gcc ggg gga tcc tat gag
     2053 acg   1440
     2054 Glu Pro Gly Asp Gly Leu Ser Ser Pro Ala Gly Gly Ser Tyr Glu
W--> 2055 Thr
W--> 2056 465                 470                 475
E--> 2057  480
E--> 2058 gga gac cgg gat gac gga cgg ggg gac ttc ggg ccc aca ctg ggc
     2059 ctg   1488
     2060 Gly Asp Arg Asp Asp Gly Arg Gly Asp Phe Gly Pro Thr Leu Gly
W--> 2061 Leu
W--> 2062                 485                 490                 495
E--> 2063 ctg cgc cca gcc cca gag cct gag gct gag ggc tca gct gtg aag
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     2064 agg   1536
     2065 Leu Arg Pro Ala Pro Glu Pro Glu Ala Glu Gly Ser Ala Val Lys
W--> 2066 Arg
W--> 2067             500                 505                 510
E--> 2068 atg cgg ctt gat acc tgg aca tta aag
     2069        1563
     2070 Met Arg Leu Asp Thr Trp Thr Leu Lys
W--> 2071         515                 520
     2072 <210> SEQ ID NO: 21
     2073 <211> LENGTH: 217
     2074 <212> TYPE: PRT
     2075 <213> ORGANISM: Rattus norvegicus
W--> 2076 <400> SEQUENCE: 21
     2077 Met Ser Leu Val Gly Gly Phe Pro His His Pro Val Val His His
E--> 2078 Glu
E--> 2079   1               5                  10                  15
     2080 Gly Tyr Pro Phe Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
E--> 2081 Ala
E--> 2082              20                  25                  30
     2083 Ser Arg Cys Ser His Glu Glu Asn Pro Tyr Phe His Gly Trp Leu
E--> 2084 Ile
E--> 2085          35                  40                  45
     2086 Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser
E--> 2087 Tyr
E--> 2088      50                  55                  60
     2089 Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His
E--> 2090 Tyr
E--> 2091  65                  70                  75
E--> 2092   80
     2093 Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro
E--> 2094 Arg
E--> 2095                  85                  90                  95
     2096 Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg
E--> 2097 Thr
E--> 2098             100                 105                 110
     2099 Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro
E--> 2100 Asn
E--> 2101         115                 120                 125
     2102 Val Pro Ala Asp Thr Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu
E--> 2103 Ala
E--> 2104     130                 135                 140
     2105 Thr Ser Tyr Ile Ala Tyr Leu Met Asp Leu Leu Ala Lys Asp Asp
E--> 2106 Gln
E--> 2107 145                 150                 155
E--> 2108  160
     2109 Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp
E--> 2110 Val
E--> 2111                 165                 170                 175
     2112 Lys Glu Glu Lys Arg Lys Lys Glu Leu Asn Glu Ile Leu Lys Ser
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 2113 Thr
E--> 2114              180                 185                 190
     2115 Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro
E--> 2116 Gln
E--> 2117         195                 200                 205
     2118 His Val Trp Ala Leu Glu Leu Lys Gln
E--> 2119     210                 215
     2120 <210> SEQ ID NO: 22
     2121 <211> LENGTH: 651
     2122 <212> TYPE: DNA
     2123 <213> ORGANISM: Rattus norvegicus
W--> 2124 <220> FEATURE:
     2125 <221> NAME/KEY: CDS
     2126 <223> OTHER INFORMATION: (1)..(654)
W--> 2127 <400> SEQUENCE: 22
E--> 2128 atg agt ctg gtg ggg ggc ttt ccc cac cac ccc gtg gtg cac cat
     2129 gag   48
     2130 Met Ser Leu Val Gly Gly Phe Pro His His Pro Val Val His His
W--> 2131 Glu
W--> 2132   1               5                  10                  15
E--> 2133 ggc tac ccg ttc gcc gca gcc gca gcc gcc gct gct gct gcc gcc
     2134 gcc   96
     2135 Gly Tyr Pro Phe Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
W--> 2136 Ala
W--> 2137              20                  25                  30
E--> 2138 agc cgc tgc agt cac gag gag aac ccc tat ttc cac ggc tgg ctt
     2139 att   144
     2140 Ser Arg Cys Ser His Glu Glu Asn Pro Tyr Phe His Gly Trp Leu
W--> 2141 Ile
W--> 2142          35                  40                  45
E--> 2143 ggc cac ccg gag atg tcg ccc ccc gac tac agc atg gcc ctg tcc
     2144 tac   192
     2145 Gly His Pro Glu Met Ser Pro Pro Asp Tyr Ser Met Ala Leu Ser
W--> 2146 Tyr
W--> 2147      50                  55                  60
E--> 2148 agt ccc gag tac gcc agc ggt gcc gcg ggc ctg gac cac tcc cat
     2149 tat   240
     2150 Ser Pro Glu Tyr Ala Ser Gly Ala Ala Gly Leu Asp His Ser His
W--> 2151 Tyr
W--> 2152  65                  70                  75
E--> 2153   80
E--> 2154 ggg gga gtg ccg ccc ggt gcc ggg cct ccc ggc ctg ggg ggg ccg
     2155 cgc   288
     2156 Gly Gly Val Pro Pro Gly Ala Gly Pro Pro Gly Leu Gly Gly Pro
W--> 2157 Arg
W--> 2158                  85                  90                  95
E--> 2159 ccg gtg aag cgt cgg ggc acc gcc aac cgc aag gag cgg cgc agg
     2160 act   336
     2161 Pro Val Lys Arg Arg Gly Thr Ala Asn Arg Lys Glu Arg Arg Arg
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 2162 Thr
W--> 2163             100                 105                 110
E--> 2164 cag agc atc aac agc gcc ttc gcc gag ctg cgc gag tgc atc ccc
     2165 aac   384
     2166 Gln Ser Ile Asn Ser Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro
W--> 2167 Asn
W--> 2168         115                 120                 125
E--> 2169 gtg ccc gcc gac acc aaa ctc tcc aaa atc aag act ctg cgc ctg
     2170 gcc   432
     2171 Val Pro Ala Asp Thr Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu
W--> 2172 Ala
W--> 2173     130                 135                 140
E--> 2174 acc agc tac atc gcc tac ctc atg gat ctg ctg gcc aag gac gac
     2175 cag   480
     2176 Thr Ser Tyr Ile Ala Tyr Leu Met Asp Leu Leu Ala Lys Asp Asp
W--> 2177 Gln
W--> 2178 145                 150                 155
E--> 2179  160
E--> 2180 aac gga gag gcg gag gcc ttc aag gcg gag atc aag aag acc gac
     2181 gtg   528
     2182 Asn Gly Glu Ala Glu Ala Phe Lys Ala Glu Ile Lys Lys Thr Asp
W--> 2183 Val
W--> 2184                 165                 170                 175
E--> 2185 aaa gag gag aag agg aag aaa gag ctg aat gaa atc ttg aaa agt
     2186 aca   576
     2187 Lys Glu Glu Lys Arg Lys Lys Glu Leu Asn Glu Ile Leu Lys Ser
W--> 2188 Thr
W--> 2189             180                 185                 190
E--> 2190 gtg agc agc aac gac aag aaa acc aaa ggc cgg aca ggc tgg cca
     2191 cag   624
     2192 Val Ser Ser Asn Asp Lys Lys Thr Lys Gly Arg Thr Gly Trp Pro
W--> 2193 Gln
W--> 2194         195                 200                 205
E--> 2195 cac gtc tgg gcc ctg gag ctc aag cag
     2196        651
     2197 His Val Trp Ala Leu Glu Leu Lys Gln
W--> 2198     210                 215
     2199 <210> SEQ ID NO: 23
     2200 <211> LENGTH: 215
     2201 <212> TYPE: PRT
     2202 <213> ORGANISM: Homo sapiens
W--> 2203 <400> SEQUENCE: 23
     2204 Met Asn Leu Val Gly Ser Tyr Ala His His His His His His His
E--> 2205 Pro
E--> 2206   1               5                  10                  15
     2207 His Pro Ala His Pro Met Leu His Glu Pro Phe Leu Phe Gly Pro
E--> 2208 Ala
E--> 2209              20                  25                  30
     2210 Ser Arg Cys His Gln Glu Arg Pro Tyr Phe Gln Ser Trp Leu Leu
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 2211 Ser
E--> 2212          35                  40                  45
     2213 Pro Ala Asp Ala Ala Pro Asp Phe Pro Ala Gly Gly Pro Pro Pro
E--> 2214 Ala
E--> 2215      50                  55                  60
     2216 Ala Ala Ala Ala Ala Thr Ala Tyr Gly Pro Asp Ala Arg Pro Gly
E--> 2217 Gln
E--> 2218  65                  70                  75
E--> 2219   80
     2220 Ser Pro Gly Arg Leu Glu Ala Leu Gly Gly Arg Leu Gly Arg Arg
E--> 2221 Lys
E--> 2222                  85                  90                  95
     2223 Gly Ser Gly Pro Lys Lys Glu Arg Arg Arg Thr Glu Ser Ile Asn
E--> 2224 Ser
E--> 2225              100                 105                 110
     2226 Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn Val Pro Ala Asp
E--> 2227 Thr
E--> 2228          115                 120                 125
     2229 Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala Thr Ser Tyr Ile
E--> 2230 Ala
E--> 2231      130                 135                 140
     2232 Tyr Leu Met Asp Val Leu Ala Lys Asp Ala Gln Ser Gly Asp Pro
E--> 2233 Glu
E--> 2234 145                 150                 155
E--> 2235  160
     2236 Ala Phe Lys Ala Glu Leu Lys Lys Ala Asp Gly Gly Arg Glu Ser
E--> 2237 Lys
E--> 2238                  165                 170                 175
     2239 Arg Lys Arg Glu Leu Gln Gln His Glu Gly Phe Pro Pro Ala Leu
E--> 2240 Gly
E--> 2241              180                 185                 190
     2242 Pro Val Glu Lys Arg Ile Lys Gly Arg Thr Gly Trp Pro Gln Gln
E--> 2243 Val
E--> 2244          195                 200                 205
     2245 Trp Ala Leu Glu Leu Asn Gln
E--> 2246      210
     2247 <210> SEQ ID NO: 24
     2248 <211> LENGTH: 645
     2249 <212> TYPE: DNA
     2250 <213> ORGANISM: Homo sapiens
W--> 2251 <220> FEATURE:
     2252 <221> NAME/KEY: CDS
     2253 <223> OTHER INFORMATION: (1)..(648)
W--> 2254 <400> SEQUENCE: 24
E--> 2255 atg aac ctc gtg ggc agc tac gca cac cat cac cac cat cac cac
     2256 ccg   48
     2257 Met Asn Leu Val Gly Ser Tyr Ala His His His His His His His
W--> 2258 Pro
W--> 2259   1               5                  10                  15
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 2260 cac cct gcg cac ccc atg ctc cac gaa ccc ttc ctc ttc ggt ccg
     2261 gcc   96
     2262 His Pro Ala His Pro Met Leu His Glu Pro Phe Leu Phe Gly Pro
W--> 2263 Ala
W--> 2264              20                  25                  30
E--> 2265 tcg cgc tgt cat cag gaa agg ccc tac ttc cag agc tgg ctg ctg
     2266 agc   144
     2267 Ser Arg Cys His Gln Glu Arg Pro Tyr Phe Gln Ser Trp Leu Leu
W--> 2268 Ser
W--> 2269          35                  40                  45
E--> 2270 ccg gct gac gct gcc ccg gac ttc cct gcg ggc ggg ccg ccg ccc
     2271 gcg   192
     2272 Pro Ala Asp Ala Ala Pro Asp Phe Pro Ala Gly Gly Pro Pro Pro
W--> 2273 Ala
W--> 2274      50                  55                  60
E--> 2275 gcc gct gca gcc gcc acc gcc tat ggt cct gac gcc agg cct ggg
     2276 cag   240
     2277 Ala Ala Ala Ala Ala Thr Ala Tyr Gly Pro Asp Ala Arg Pro Gly
W--> 2278 Gln
W--> 2279  65                  70                  75
E--> 2280   80
E--> 2281 agc ccc ggg cgg ctg gag gcg ctt ggc ggc cgt ctt ggc cgg cgg
     2282 aaa   288
     2283 Ser Pro Gly Arg Leu Glu Ala Leu Gly Gly Arg Leu Gly Arg Arg
W--> 2284 Lys
W--> 2285                  85                  90                  95
E--> 2286 ggc tca gga ccc aag aag gag cgg aga cgc act gag agc att aac
     2287 agc   336
     2288 Gly Ser Gly Pro Lys Lys Glu Arg Arg Arg Thr Glu Ser Ile Asn
W--> 2289 Ser
W--> 2290             100                 105                 110
E--> 2291 gca ttc gcg gag ttg cgc gag tgc atc ccc aac gtg ccg gcc gac
     2292 acc   384
     2293 Ala Phe Ala Glu Leu Arg Glu Cys Ile Pro Asn Val Pro Ala Asp
W--> 2294 Thr
W--> 2295         115                 120                 125
E--> 2296 aag ctc tcc aag atc aag act ctg cgc cta gcc acc agc tac atc
     2297 gcc   432
     2298 Lys Leu Ser Lys Ile Lys Thr Leu Arg Leu Ala Thr Ser Tyr Ile
W--> 2299 Ala
W--> 2300     130                 135                 140
E--> 2301 tac ctg atg gac gtg ctg gcc aag gat gca cag tct ggc gat ccc
     2302 gag   480
     2303 Tyr Leu Met Asp Val Leu Ala Lys Asp Ala Gln Ser Gly Asp Pro
W--> 2304 Glu
W--> 2305 145                 150                 155
E--> 2306  160
E--> 2307 gcc ttc aag gct gaa ctc aag aag gcg gat ggc ggc cgt gag agc
     2308 aag   528
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     2309 Ala Phe Lys Ala Glu Leu Lys Lys Ala Asp Gly Gly Arg Glu Ser
W--> 2310 Lys
W--> 2311                 165                 170                 175
E--> 2312 cgg aaa agg gag ctg cag cag cac gaa ggt ttt cct cct gcc ctg
     2313 ggc   576
     2314 Arg Lys Arg Glu Leu Gln Gln His Glu Gly Phe Pro Pro Ala Leu
W--> 2315 Gly
W--> 2316             180                 185                 190
E--> 2317 cca gtc gag aag agg att aaa gga cgc acc ggc tgg ccg cag caa
     2318 gtc   624
     2319 Pro Val Glu Lys Arg Ile Lys Gly Arg Thr Gly Trp Pro Gln Gln
W--> 2320 Val
W--> 2321         195                 200                 205
E--> 2322 tgg gcg ctg gag tta aac cag
     2323        645
     2324 Trp Ala Leu Glu Leu Asn Gln
W--> 2325     210                 215
     2326 <210> SEQ ID NO: 25
     2327 <211> LENGTH: 411
     2328 <212> TYPE: PRT
     2329 <213> ORGANISM: Homo sapiens
W--> 2330 <400> SEQUENCE: 25
     2331 Met Glu Arg Met Ser Asp Ser Ala Asp Lys Pro Ile Asp Asn Asp
E--> 2332 Ala
E--> 2333   1               5                  10                  15
     2334 Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala
E--> 2335 Leu
E--> 2336              20                  25                  30
     2337 Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp
E--> 2338 Glu
E--> 2339          35                  40                  45
     2340 Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys
E--> 2341 Leu
E--> 2342      50                  55                  60
     2343 Arg Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile
E--> 2344 Gln
E--> 2345  65                  70                  75
E--> 2346   80
     2347 Val Leu Ala Arg Arg Lys Ser Arg Asp Phe His Ser Lys Leu Lys
E--> 2348 Asp
E--> 2349                  85                  90                  95
     2350 Gln Thr Ala Lys Asp Lys Ala Leu Gln His Met Ala Ala Met Ser
E--> 2351 Ser
E--> 2352             100                 105                 110
     2353 Ala Gln Ile Val Ser Ala Thr Ala Ile His Asn Lys Leu Gly Leu
E--> 2354 Pro
E--> 2355         115                 120                 125
     2356 Gly Ile Pro Arg Pro Thr Phe Pro Gly Ala Pro Gly Phe Trp Pro
E--> 2357 Gly
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 2358     130                 135                 140
     2359 Met Ile Gln Thr Gly Gln Pro Gly Ser Ser Gln Asp Val Lys Pro
E--> 2360 Phe
E--> 2361 145                 150                 155
E--> 2362  160
     2363 Val Gln Gln Ala Tyr Pro Ile Gln Pro Ala Val Thr Ala Pro Ile
E--> 2364 Pro
E--> 2365                 165                 170                 175
     2366 Gly Phe Glu Pro Ala Ser Ala Pro Ala Pro Ser Val Pro Ala Trp
E--> 2367 Gln
E--> 2368             180                 185                 190
     2369 Gly Arg Ser Ile Gly Thr Thr Lys Leu Arg Leu Val Glu Phe Ser
E--> 2370 Ala
E--> 2371         195                 200                 205
     2372 Phe Leu Glu Gln Gln Arg Asp Pro Asp Ser Tyr Asn Lys His Leu
E--> 2373 Phe
E--> 2374     210                 215                 220
     2375 Val His Ile Gly His Ala Asn His Ser Tyr Ser Asp Pro Leu Leu
E--> 2376 Glu
E--> 2377 225                 230                 235
E--> 2378  240
     2379 Ser Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys
E--> 2380 Gly
E--> 2381                 245                 250                 255
     2382 Gly Leu Lys Glu Leu Phe Gly Lys Gly Pro Gln Asn Ala Phe Phe
E--> 2383 Leu
E--> 2384             260                 265                 270
     2385 Val Lys Phe Trp Ala Asp Leu Asn Cys Asn Ile Gln Asp Asp Ala
E--> 2386 Gly
E--> 2387         275                 280                 285
     2388 Ala Phe Tyr Gly Val Thr Ser Gln Tyr Glu Ser Ser Glu Asn Met
E--> 2389 Thr
E--> 2390     290                 295                 300
     2391 Val Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val
E--> 2392 Glu
E--> 2393 305                 310                 315
E--> 2394  320
     2395 Lys Val Glu Thr Glu Tyr Ala Arg Phe Glu Asn Gly Arg Phe Val
E--> 2396 Tyr
E--> 2397                 325                 330                 335
     2398 Arg Ile Asn Arg Ser Pro Met Cys Glu Tyr Met Ile Asn Phe Ile
E--> 2399 His
E--> 2400             340                 345                 350
     2401 Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu
E--> 2402 Glu
E--> 2403         355                 360                 365
     2404 Asn Phe Thr Ile Leu Leu Val Val Thr Asn Arg Asp Thr Gln Glu
E--> 2405 Thr
E--> 2406     370                 375                 380
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     2407 Leu Leu Cys Met Ala Cys Val Phe Glu Val Ser Asn Ser Glu His
E--> 2408 Gly
E--> 2409 385                 390                 395
E--> 2410  400
     2411 Ala Gln His His Ile Tyr Arg Leu Val Lys Asp
E--> 2412                405                 410
     2413 <210> SEQ ID NO: 26
     2414 <211> LENGTH: 1233
     2415 <212> TYPE: DNA
     2416 <213> ORGANISM: Homo sapiens
W--> 2417 <220> FEATURE:
     2418 <221> NAME/KEY: CDS
     2419 <223> OTHER INFORMATION: (1)..(1236)
W--> 2420 <400> SEQUENCE: 26
E--> 2421 atg gaa agg atg agt gac tct gca gat aag cca att gac aat gat
     2422 gca   48
     2423 Met Glu Arg Met Ser Asp Ser Ala Asp Lys Pro Ile Asp Asn Asp
W--> 2424 Ala
W--> 2425   1               5                  10                  15
E--> 2426 gaa ggg gtc tgg agc ccc gac atc gag caa agc ttt cag gag gcc
     2427 ctg   96
     2428 Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala
W--> 2429 Leu
W--> 2430             20                  25                  30
E--> 2431 gct atc tat cca cca tgt ggg agg agg aaa atc atc tta tca gac
     2432 gaa   144
     2433 Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp
W--> 2434 Glu
W--> 2435          35                  40                  45
E--> 2436 ggc aaa atg tat ggt agg aat gaa ttg ata gcc aga tac atc aaa
     2437 ctc   192
     2438 Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys
W--> 2439 Leu
W--> 2440      50                  55                  60
E--> 2441 agg aca ggc aag acg agg acc aga aaa cag gtg tct agt cac att
     2442 cag   240
     2443 Arg Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile
W--> 2444 Gln
W--> 2445  65                  70                  75
E--> 2446   80
E--> 2447 gtt ctt gcc aga agg aaa tct cgt gat ttt cat tcc aag cta aag
     2448 gat   288
     2449 Val Leu Ala Arg Arg Lys Ser Arg Asp Phe His Ser Lys Leu Lys
W--> 2450 Asp
W--> 2451                  85                  90                  95
E--> 2452 cag act gca aag gat aag gcc ctg cag cac atg gcg gcc atg tcc
     2453 tca   336
     2454 Gln Thr Ala Lys Asp Lys Ala Leu Gln His Met Ala Ala Met Ser
W--> 2455 Ser
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 2456              100                 105                 110
E--> 2457 gcc cag atc gtc tcg gcc act gcc att cat aac aag ctg ggg ctg
     2458 cct   384
     2459 Ala Gln Ile Val Ser Ala Thr Ala Ile His Asn Lys Leu Gly Leu
W--> 2460 Pro
W--> 2461         115                 120                 125
E--> 2462 ggg att cca cgc ccg acc ttc cca ggg gcg ccg ggg ttc tgg ccg
     2463 gga   432
     2464 Gly Ile Pro Arg Pro Thr Phe Pro Gly Ala Pro Gly Phe Trp Pro
W--> 2465 Gly
W--> 2466     130                 135                 140
E--> 2467 atg att caa aca ggg cag cca gga tcc tca caa gac gtc aag cct
     2468 ttt   480
     2469 Met Ile Gln Thr Gly Gln Pro Gly Ser Ser Gln Asp Val Lys Pro
W--> 2470 Phe
W--> 2471 145                 150                 155
E--> 2472  160
E--> 2473 gtg cag cag gcc tac ccc atc cag cca gcg gtc aca gcc ccc att
     2474 cca   528
     2475 Val Gln Gln Ala Tyr Pro Ile Gln Pro Ala Val Thr Ala Pro Ile
W--> 2476 Pro
W--> 2477                 165                 170                 175
E--> 2478 ggg ttt gag cct gca tcg gcc cca gct ccc tca gtc cct gcc tgg
     2479 caa   576
     2480 Gly Phe Glu Pro Ala Ser Ala Pro Ala Pro Ser Val Pro Ala Trp
W--> 2481 Gln
W--> 2482             180                 185                 190
E--> 2483 ggt cgc tcc att ggc aca acc aag ctt cgc ctg gtg gaa ttt tca
     2484 gct   624
     2485 Gly Arg Ser Ile Gly Thr Thr Lys Leu Arg Leu Val Glu Phe Ser
W--> 2486 Ala
W--> 2487         195                 200                 205
E--> 2488 ttt ctc gag cag cag cga gac cca gac tcg tac aac aaa cac ctc
     2489 ttc   672
     2490 Phe Leu Glu Gln Gln Arg Asp Pro Asp Ser Tyr Asn Lys His Leu
W--> 2491 Phe
W--> 2492     210                 215                 220
E--> 2493 gtg cac att ggg cat gcc aac cat tct tac agt gac cca ttg ctt
     2494 gaa   720
     2495 Val His Ile Gly His Ala Asn His Ser Tyr Ser Asp Pro Leu Leu
W--> 2496 Glu
W--> 2497 225                 230                 235
E--> 2498  240
E--> 2499 tca gtg gac att cgt cag att tat gac aaa ttt cct gaa aag aaa
     2500 ggt   768
     2501 Ser Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys
W--> 2502 Gly
W--> 2503                 245                 250                 255
E--> 2504 ggc tta aag gaa ctg ttt gga aag ggc cct caa aat gcc ttc ttc
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
     2505 ctc   816
     2506 Gly Leu Lys Glu Leu Phe Gly Lys Gly Pro Gln Asn Ala Phe Phe
W--> 2507 Leu
W--> 2508              260                 265                 270
E--> 2509 gta aaa ttc tgg gct gat tta aac tgc aat att caa gat gat gct
     2510 ggg   864
     2511 Val Lys Phe Trp Ala Asp Leu Asn Cys Asn Ile Gln Asp Asp Ala
W--> 2512 Gly
W--> 2513         275                 280                 285
E--> 2514 gct ttt tat ggt gta acc agt cag tac gag agt tct gaa aat atg
     2515 aca   912
     2516 Ala Phe Tyr Gly Val Thr Ser Gln Tyr Glu Ser Ser Glu Asn Met
W--> 2517 Thr
W--> 2518     290                 295                 300
E--> 2519 gtc acc tgt tcc acc aaa gtt tgc tcc ttt ggg aag caa gta gta
     2520 gaa   960
     2521 Val Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val
W--> 2522 Glu
W--> 2523 305                 310                 315
E--> 2524  320
E--> 2525 aaa gta gag acg gag tat gca agg ttt gag aat ggc cga ttt gta
     2526 tac   1008
     2527 Lys Val Glu Thr Glu Tyr Ala Arg Phe Glu Asn Gly Arg Phe Val
W--> 2528 Tyr
W--> 2529                 325                 330                 335
E--> 2530 cga ata aac cgc tcc cca atg tgt gaa tat atg atc aac ttc atc
     2531 cac   1056
     2532 Arg Ile Asn Arg Ser Pro Met Cys Glu Tyr Met Ile Asn Phe Ile
W--> 2533 His
W--> 2534              340                 345                 350
E--> 2535 aag ctc aaa cac tta cca gag aaa tat atg atg aac agt gtt ttg
     2536 gaa   1104
     2537 Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu
W--> 2538 Glu
W--> 2539         355                 360                 365
E--> 2540 aac ttc aca att tta ttg gtg gta aca aac agg gat aca caa gaa
     2541 act   1152
     2542 Asn Phe Thr Ile Leu Leu Val Val Thr Asn Arg Asp Thr Gln Glu
W--> 2543 Thr
W--> 2544     370                 375                 380
E--> 2545 cta ctc tgc atg gcc tgt gtg ttt gaa gtt tca aat agt gaa cac
     2546 gga   1200
     2547 Leu Leu Cys Met Ala Cys Val Phe Glu Val Ser Asn Ser Glu His
W--> 2548 Gly
W--> 2549 385                 390                 395
E--> 2550  400
E--> 2551 gca caa cat cat att tac agg ctt gta aag gac
     2552        1233
     2553 Ala Gln His His Ile Tyr Arg Leu Val Lys Asp
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
W--> 2554                  405                 410
     2555 <210> SEQ ID NO: 27
     2556 <211> LENGTH: 427
     2557 <212> TYPE: PRT
     2558 <213> ORGANISM: Homo sapiens
W--> 2559 <400> SEQUENCE: 27
     2560 Ile Thr Ser Asn Glu Trp Ser Ser Pro Thr Ser Pro Glu Gly Ser
E--> 2561 Thr
E--> 2562   1               5                  10                  15
     2563 Ala Ser Gly Gly Ser Gln Ala Leu Asp Lys Pro Ile Asp Asn Asp
E--> 2564 Ala
E--> 2565              20                  25                  30
     2566 Glu Gly Val Trp Ser Pro Asp Ile Glu Gln Ser Phe Gln Glu Ala
E--> 2567 Leu
E--> 2568          35                  40                  45
     2569 Ala Ile Tyr Pro Pro Cys Gly Arg Arg Lys Ile Ile Leu Ser Asp
E--> 2570 Glu
E--> 2571      50                  55                  60
     2572 Gly Lys Met Tyr Gly Arg Asn Glu Leu Ile Ala Arg Tyr Ile Lys
E--> 2573 Leu
E--> 2574  65                  70                  75
E--> 2575   80
     2576 Arg Thr Gly Lys Thr Arg Thr Arg Lys Gln Val Ser Ser His Ile
E--> 2577 Gln
E--> 2578                  85                  90                  95
     2579 Val Leu Ala Arg Arg Lys Ala Arg Glu Ile Gln Ala Lys Leu Lys
E--> 2580 Asp
E--> 2581              100                 105                 110
     2582 Gln Ala Ala Lys Asp Lys Ala Leu Gln Ser Met Ala Ala Met Ser
E--> 2583 Ser
E--> 2584          115                 120                 125
     2585 Ala Gln Ile Ile Ser Ala Thr Ala Phe His Ser Ser Met Ala Leu
E--> 2586 Ala
E--> 2587      130                 135                 140
     2588 Arg Gly Pro Gly Arg Pro Ala Val Ser Gly Phe Trp Gln Gly Ala
E--> 2589 Leu
E--> 2590 145                 150                 155
E--> 2591  160
     2592 Pro Gly Gln Ala Gly Thr Ser His Asp Val Lys Pro Phe Ser Gln
E--> 2593 Gln
E--> 2594                  165                 170                 175
     2595 Thr Tyr Ala Val Gln Pro Pro Leu Pro Leu Pro Gly Phe Glu Ser
E--> 2596 Pro
E--> 2597              180                 185                 190
     2598 Ala Gly Pro Ala Pro Ser Pro Ser Ala Pro Pro Ala Pro Pro Trp
E--> 2599 Gln
E--> 2600          195                 200                 205
     2601 Gly Arg Ser Val Ala Ser Ser Lys Leu Trp Met Leu Glu Phe Ser
E--> 2602 Ala
```

RAW SEQUENCE LISTING DATE: 10/03/2001
PATENT APPLICATION: US/09/749,728 TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

```
E--> 2603     210                 215                 220
     2604 Phe Leu Glu Gln Gln Gln Asp Pro Asp Thr Tyr Asn Lys His Leu
E--> 2605 Phe
E--> 2606 225                 230                 235
E--> 2607  240
     2608 Val His Ile Gly Gln Ser Ser Pro Ser Tyr Ser Asp Pro Tyr Leu
E--> 2609 Glu
E--> 2610                 245                 250                 255
     2611 Ala Val Asp Ile Arg Gln Ile Tyr Asp Lys Phe Pro Glu Lys Lys
E--> 2612 Gly
E--> 2613             260                 265                 270
     2614 Gly Leu Lys Asp Leu Phe Glu Arg Gly Pro Ser Asn Ala Phe Phe
E--> 2615 Leu
E--> 2616         275                 280                 285
     2617 Val Lys Phe Trp Ala Asp Leu Asn Thr Asn Ile Glu Asp Glu Gly
E--> 2618 Ser
E--> 2619     290                 295                 300
     2620 Ser Phe Tyr Gly Val Ser Ser Gln Tyr Glu Ser Pro Glu Asn Met
E--> 2621 Ile
E--> 2622 305                 310                 315
E--> 2623  320
     2624 Ile Thr Cys Ser Thr Lys Val Cys Ser Phe Gly Lys Gln Val Val
E--> 2625 Glu
E--> 2626                 325                 330                 335
     2627 Lys Val Glu Thr Glu Tyr Ala Arg Tyr Glu Asn Gly His Tyr Ser
E--> 2628 Tyr
E--> 2629             340                 345                 350
     2630 Arg Ile His Arg Ser Pro Leu Cys Glu Tyr Met Ile Asn Phe Ile
E--> 2631 His
E--> 2632         355                 360                 365
     2633 Lys Leu Lys His Leu Pro Glu Lys Tyr Met Met Asn Ser Val Leu
E--> 2634 Glu
E--> 2635     370                 375                 380
     2636 Asn Phe Thr Ile Leu Gln Val Val Thr Asn Arg Asp Thr Gln Glu
E--> 2637 Thr
E--> 2638 385                 390                 395
E--> 2639  400
     2640 Leu Leu Cys Ile Ala Tyr Val Phe Glu Val Ser Ala Ser Glu His
E--> 2641 Gly
E--> 2642                 405                 410                 415
     2643 Ala Gln His His Ile Tyr Arg Leu Val Lys Glu
E--> 2644             420                 425
     2645 <210> SEQ ID NO: 28
     2646 <211> LENGTH: 1281
     2647 <212> TYPE: DNA
     2648 <213> ORGANISM: Homo sapiens
W--> 2649 <220> FEATURE:
     2650 <221> NAME/KEY: CDS
     2651 <223> OTHER INFORMATION: (1)..(1284)
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:28

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

W--> 2652 <400> SEQUENCE: 28

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:29

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

L:5 M:250 E: Invalid Numeric Identifier, INVALID IDENTIFIER
L:0 M:201 W: Mandatory field data missing, TITLE INVENTION
L:10 M:270 C: Current Application Number differs, Replaced Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:30 M:283 W: Missing Blank Line separator, <400> field identifier
L:32 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:1
M:332 Repeated in SeqNo=1
L:118 M:283 W: Missing Blank Line separator, <220> field identifier
L:121 M:283 W: Missing Blank Line separator, <400> field identifier
L:122 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:2
L:125 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:126 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
M:254 Repeated in SeqNo=2
L:130 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:131 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:135 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:136 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:140 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:141 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:145 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:146 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:151 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:152 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:156 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:157 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:161 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:162 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:166 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:167 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:171 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:172 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:177 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:178 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:182 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:183 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:187 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:188 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:192 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:193 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:197 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:198 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:203 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:204 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:208 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:209 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:213 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:214 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:218 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:29

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

L:219 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:223 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:224 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:229 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:230 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:234 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:235 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:239 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:240 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:244 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:245 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:249 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:250 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:2
L:260 M:283 W: Missing Blank Line separator, <400> field identifier
L:262 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:3
M:332 Repeated in SeqNo=3
L:305 M:283 W: Missing Blank Line separator, <220> field identifier
L:308 M:283 W: Missing Blank Line separator, <400> field identifier
L:309 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:4
M:254 Repeated in SeqNo=4
L:379 M:283 W: Missing Blank Line separator, <400> field identifier
L:381 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:5
M:332 Repeated in SeqNo=5
L:433 M:283 W: Missing Blank Line separator, <220> field identifier
L:436 M:283 W: Missing Blank Line separator, <400> field identifier
L:437 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:6
M:254 Repeated in SeqNo=6
L:522 M:283 W: Missing Blank Line separator, <400> field identifier
L:524 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:7
M:332 Repeated in SeqNo=7
L:557 M:283 W: Missing Blank Line separator, <220> field identifier
L:560 M:283 W: Missing Blank Line separator, <400> field identifier
L:561 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:8
M:254 Repeated in SeqNo=8
L:615 M:283 W: Missing Blank Line separator, <400> field identifier
L:617 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:9
M:332 Repeated in SeqNo=9
L:686 M:283 W: Missing Blank Line separator, <220> field identifier
L:689 M:283 W: Missing Blank Line separator, <400> field identifier
L:690 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:10
M:254 Repeated in SeqNo=10
L:802 M:283 W: Missing Blank Line separator, <400> field identifier
L:804 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:11
M:332 Repeated in SeqNo=11
L:895 M:283 W: Missing Blank Line separator, <220> field identifier
L:898 M:283 W: Missing Blank Line separator, <400> field identifier
L:899 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:12
M:254 Repeated in SeqNo=12
L:1047 M:283 W: Missing Blank Line separator, <400> field identifier

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:29

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

L:1049 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:13
M:332 Repeated in SeqNo=13
L:1153 M:283 W: Missing Blank Line separator, <220> field identifier
L:1156 M:283 W: Missing Blank Line separator, <400> field identifier
L:1157 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:14
M:254 Repeated in SeqNo=14
L:1326 M:283 W: Missing Blank Line separator, <400> field identifier
L:1328 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:15
M:332 Repeated in SeqNo=15
L:1403 M:283 W: Missing Blank Line separator, <220> field identifier
L:1406 M:283 W: Missing Blank Line separator, <400> field identifier
L:1407 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:16
M:254 Repeated in SeqNo=16
L:1529 M:283 W: Missing Blank Line separator, <400> field identifier
L:1531 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:17
M:332 Repeated in SeqNo=17
L:1627 M:283 W: Missing Blank Line separator, <220> field identifier
L:1630 M:283 W: Missing Blank Line separator, <400> field identifier
L:1631 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:18
M:254 Repeated in SeqNo=18
L:1789 M:283 W: Missing Blank Line separator, <400> field identifier
L:1791 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:19
M:332 Repeated in SeqNo=19
L:1898 M:283 W: Missing Blank Line separator, <220> field identifier
L:1901 M:283 W: Missing Blank Line separator, <400> field identifier
L:1902 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:20
M:254 Repeated in SeqNo=20
L:2076 M:283 W: Missing Blank Line separator, <400> field identifier
L:2078 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:21
M:332 Repeated in SeqNo=21
L:2124 M:283 W: Missing Blank Line separator, <220> field identifier
L:2127 M:283 W: Missing Blank Line separator, <400> field identifier
L:2128 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:22
M:254 Repeated in SeqNo=22
L:2203 M:283 W: Missing Blank Line separator, <400> field identifier
L:2205 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:23
M:332 Repeated in SeqNo=23
L:2251 M:283 W: Missing Blank Line separator, <220> field identifier
L:2254 M:283 W: Missing Blank Line separator, <400> field identifier
L:2255 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:24
M:254 Repeated in SeqNo=24
L:2330 M:283 W: Missing Blank Line separator, <400> field identifier
L:2332 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:25
M:332 Repeated in SeqNo=25
L:2417 M:283 W: Missing Blank Line separator, <220> field identifier
L:2420 M:283 W: Missing Blank Line separator, <400> field identifier
L:2421 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:26
M:254 Repeated in SeqNo=26
L:2559 M:283 W: Missing Blank Line separator, <400> field identifier

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:29

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

L:2561 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:27
M:332 Repeated in SeqNo=27
L:2649 M:283 W: Missing Blank Line separator, <220> field identifier
L:2652 M:283 W: Missing Blank Line separator, <400> field identifier
L:2653 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:28
M:254 Repeated in SeqNo=28
L:2796 M:283 W: Missing Blank Line separator, <400> field identifier
L:2798 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:29
M:332 Repeated in SeqNo=29
L:2888 M:283 W: Missing Blank Line separator, <220> field identifier
L:2891 M:283 W: Missing Blank Line separator, <400> field identifier
L:2892 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:30
M:254 Repeated in SeqNo=30
L:3040 M:283 W: Missing Blank Line separator, <400> field identifier
L:3042 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:31
M:332 Repeated in SeqNo=31
L:3271 M:283 W: Missing Blank Line separator, <220> field identifier
L:3274 M:283 W: Missing Blank Line separator, <400> field identifier
L:3275 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:45 SEQ:32
M:254 Repeated in SeqNo=32
L:3648 M:283 W: Missing Blank Line separator, <220> field identifier
L:3651 M:283 W: Missing Blank Line separator, <400> field identifier
L:3652 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:21 SEQ:33
L:3663 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:34
L:3673 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:35
L:3683 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:36
L:3693 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:23 SEQ:37
L:3703 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:22 SEQ:38
L:3713 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:24 SEQ:39
L:3723 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:24 SEQ:40
L:3733 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:19 SEQ:41
L:3743 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:22 SEQ:42
L:3753 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:24 SEQ:43
L:3763 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:44
L:3773 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:18 SEQ:45
L:3783 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:18 SEQ:46
L:3793 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:47
L:3803 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:48
L:3813 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:49
L:3823 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:20 SEQ:50
L:3931 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:61
M:332 Repeated in SeqNo=61
L:4116 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:63
M:332 Repeated in SeqNo=63
L:4270 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:65
M:332 Repeated in SeqNo=65
L:4423 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:67
M:332 Repeated in SeqNo=67
L:4524 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:69

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/749,728

DATE: 10/03/2001
TIME: 15:39:29

Input Set : A:\pto_vsk.txt
Output Set: N:\CRF3\10032001\I749728.raw

M:332 Repeated in SeqNo=69
L:4801 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4801 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4809 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4809 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4817 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4817 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4825 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4825 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4833 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4833 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4841 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4841 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4849 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4849 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4857 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4857 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4865 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4865 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4873 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:4873 M:258 W: Mandatory Feature missing, <223> OTHER INFORMATION:
L:4879 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:2
L:4879 M:252 E: No. of Seq. differs, <211>LENGTH:Input:19 Found:20 SEQ:80

This application file contains additional errors !
Only the first 1000 errors are shown above !